

# Colliers GIS

## MAPPING SAMPLE BOOK

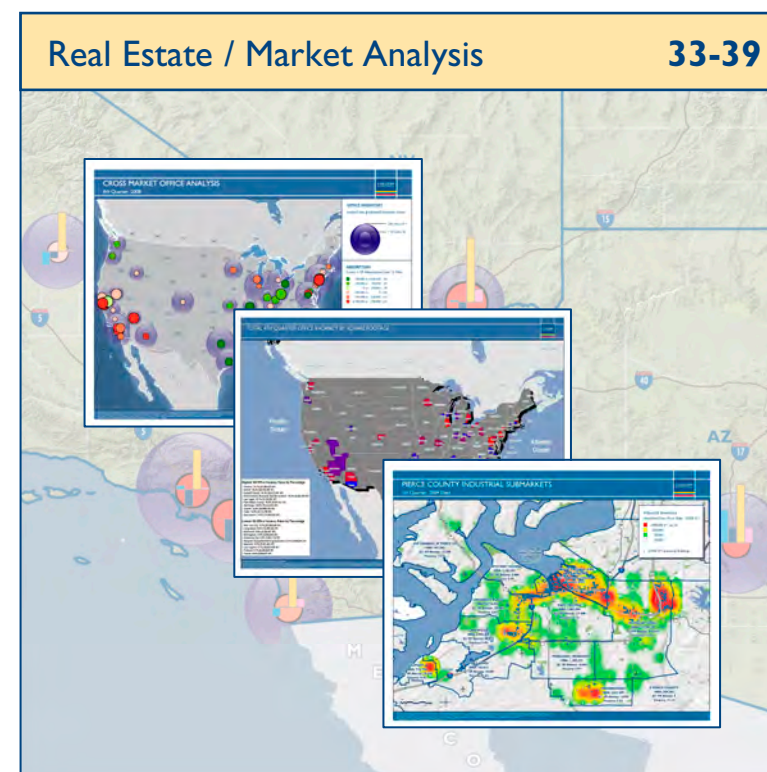
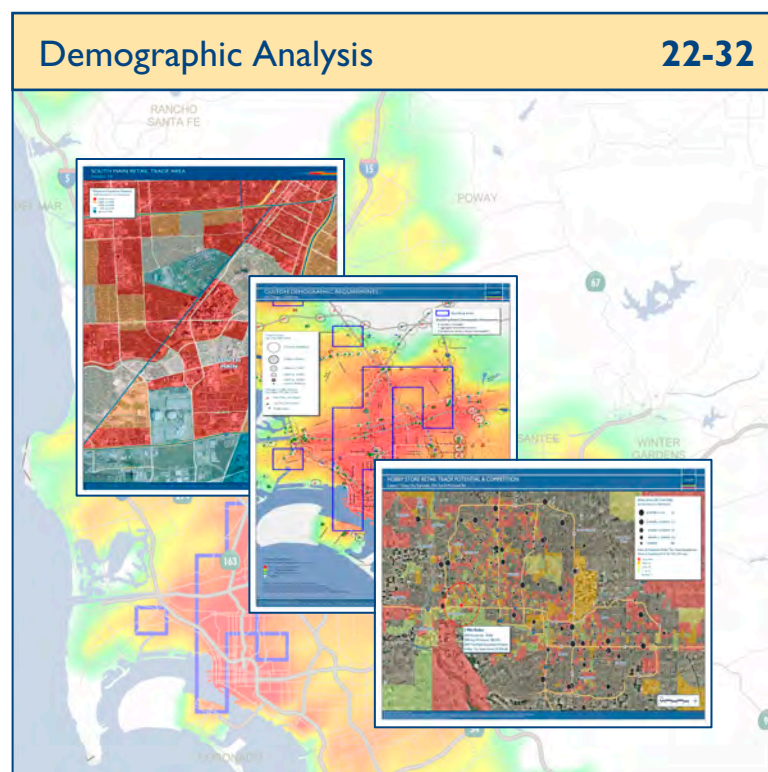
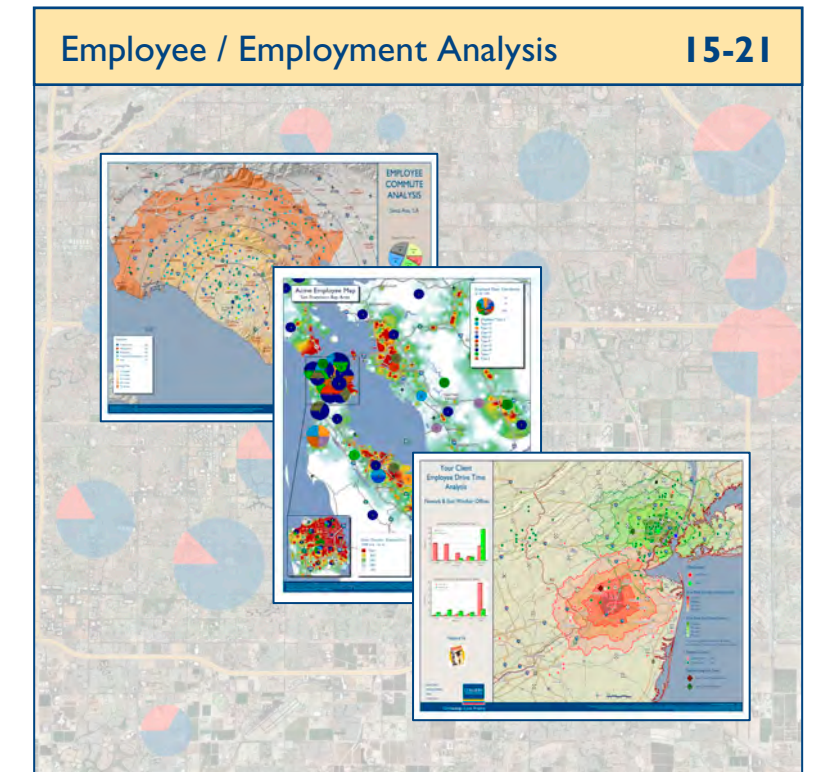
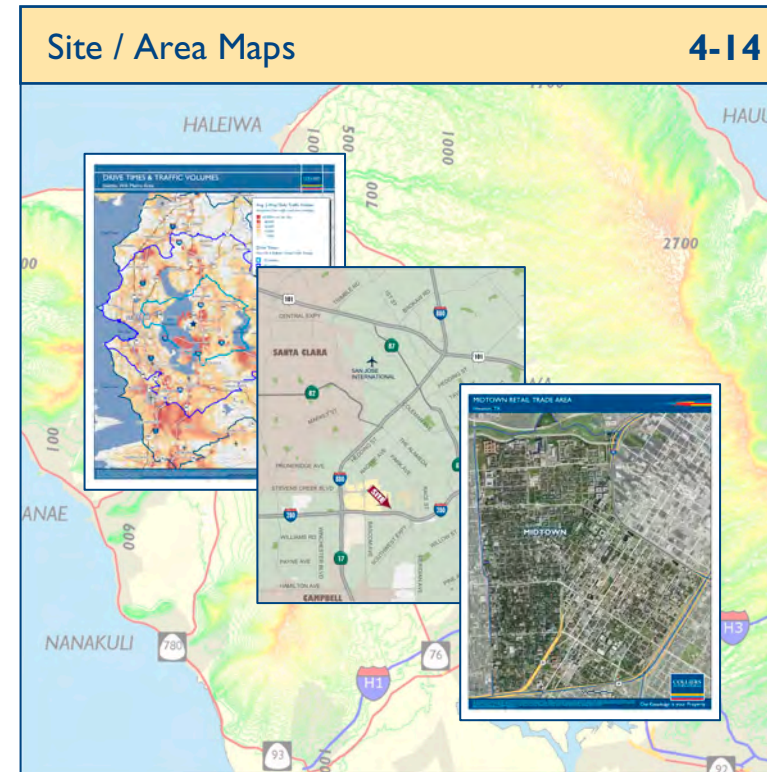
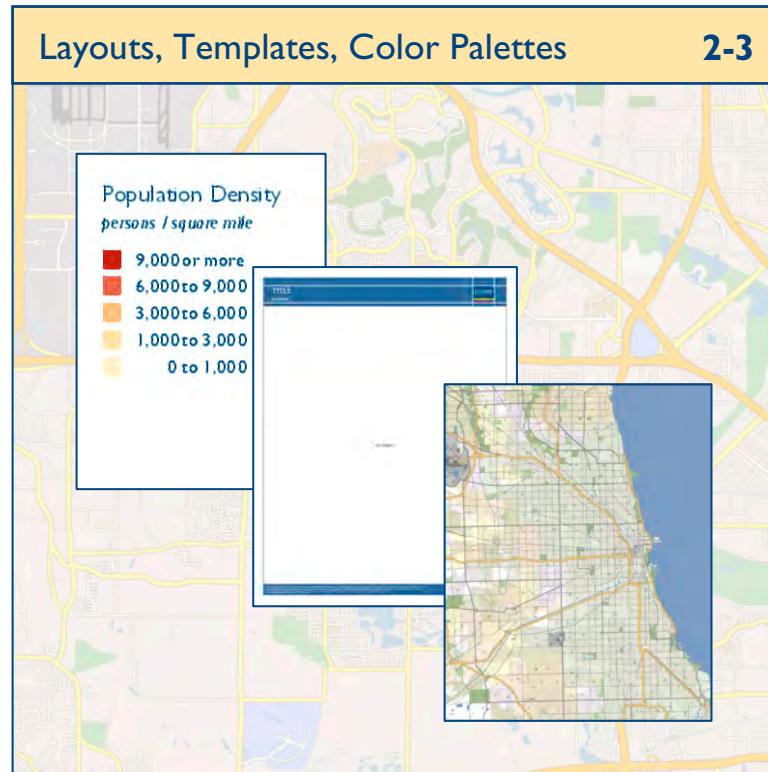
Colliers GIS is a full service geographic consulting and mapping group. We provide cartographic, demographic, and analytic products and services to Colliers professionals, affiliates, and partners; and directly to clients and other companies.

Our mission is to make GIS more accessible, valuable, and widely utilized in order to positively impact the real estate industry. We strive for the highest quality, and emphasize outstanding customer service en route to accomplishing this mission.

This sample book contains a representative collection of our products. It is not intended to demonstrate the full breadth or depth of deliverables. Rather, it is meant to convey a general understanding of our content and quality, and serve as a conversation piece to develop custom solutions that meet your needs and those of your client. If you are interested, or have questions about anything, in this book, please contact Colliers GIS.

### For Information Contact:

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<http://www.colliersteams.com/gis>



Map data and elements are not limited to any particular category or type of map. All data can be combined, layered, and displayed in countless ways to create different visual effects, different analysis, and to convey different information. Any data with a geographic component can be displayed on a map. Typically this data can include, but is not limited to:

- Base vector data – streets, freeways, political boundaries, places of interest, etc....
- Aerial or satellite photography
- Demographic, psychographic (segmentation), consumer expenditure, and business data
- Business point data and related information
- Traffic counts and drive time / drive distance data
- Real estate & economic market data
- Any data supplied by you or your client



# Colliers GIS MAPPING SAMPLE BOOK

## Layouts, Templates, Palettes

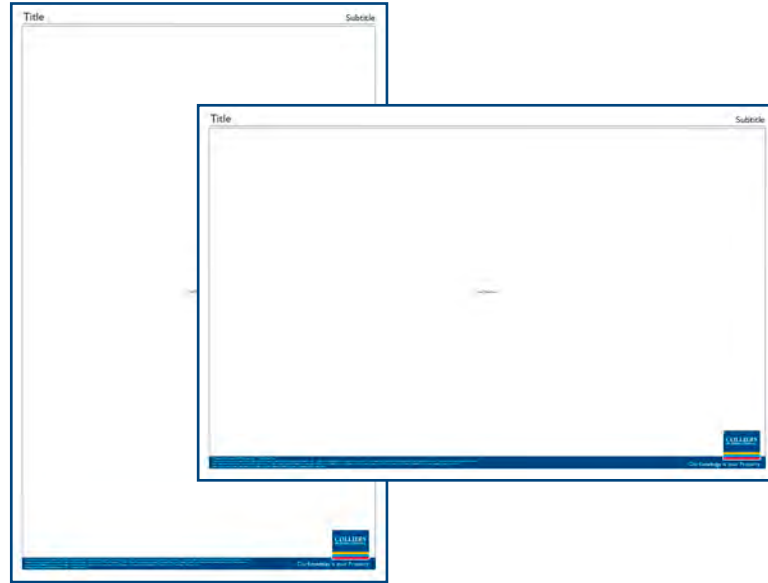
Utilizing standard styles, colors, and layouts / graphic elements helps to create stronger branding and improve quality and consistency from project to project and across all geographies. It also enables us to produce more maps in less time.

Standards can evolve and expand over time. Think of them as a starting point, not a limitation, which can be customized to meet the requirements of a particular project.

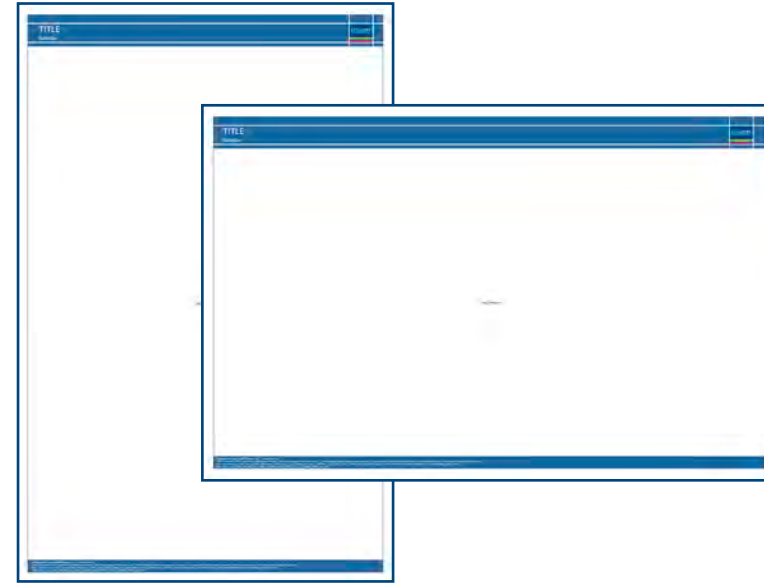
## Layouts

A layout is an arrangement of several graphic elements, including one or more frames that contain a map. It is essentially the final product that is created. They can be any size, such as a 3.5" x 4.75" map to be included in a flyer or a 60" x 40" poster. Common examples are 11"x17" or 8 1/2" x 11" portrait or landscape.

### Simple



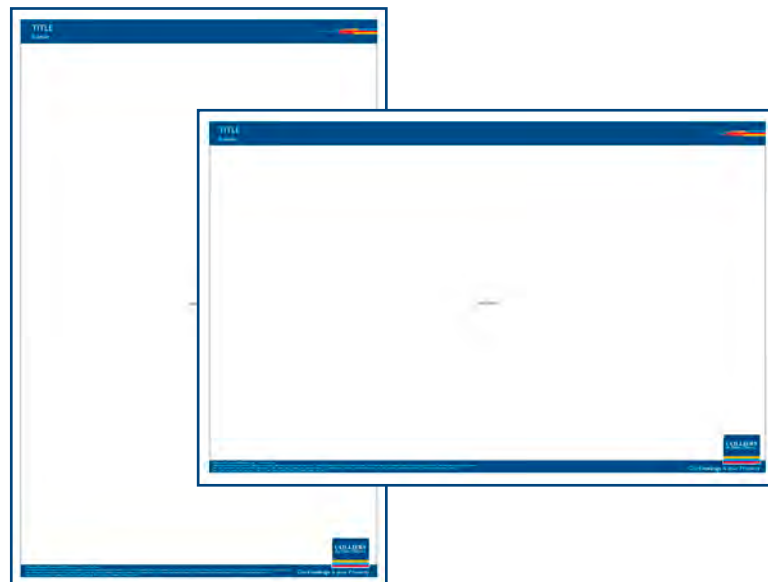
### Top Bar



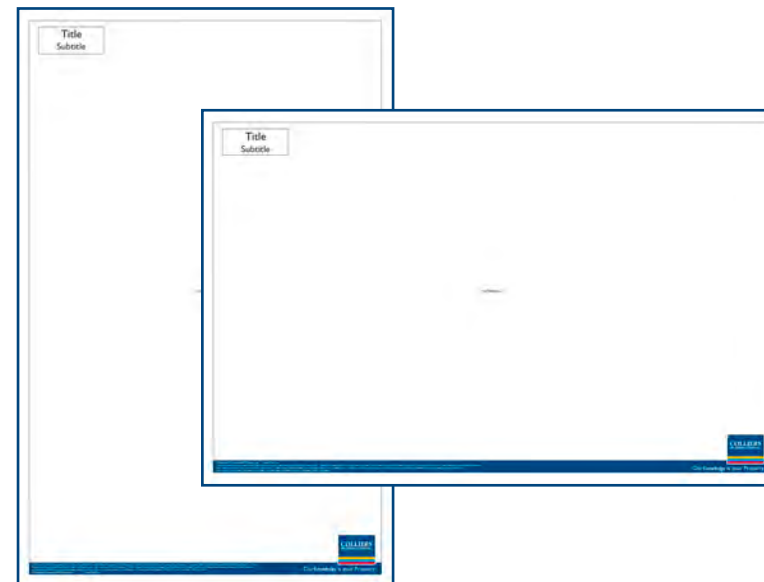
### Right Bar



### Accelerate



### Title Box



### Left Bar



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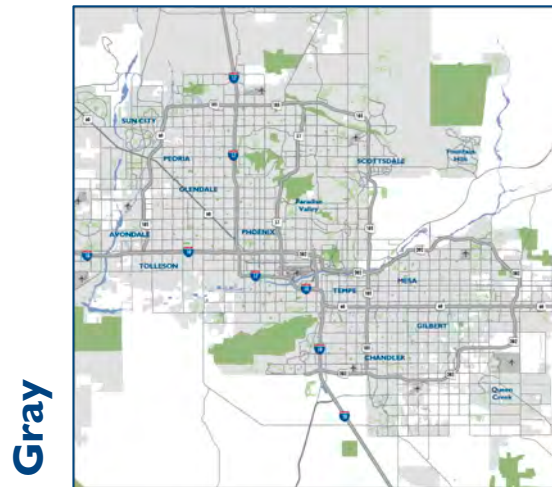
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## Map Templates & Color Palettes –

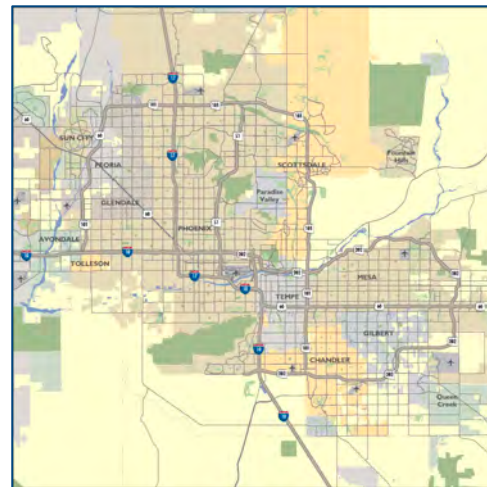
The colors and styles used to depict geographic information can contribute significantly to the aesthetic quality of a map, and affect how the information on a map is interpreted. Not all colors / styles work equally well at all scales, in all markets, or with all data.

We have defined styles and colors for base vector layers (freeways, etc...), and also color palettes that are setup for thematically mapping different data such as median income, employment density, etc.... We have numerous color palettes for thematic mapping in addition to what is shown here.

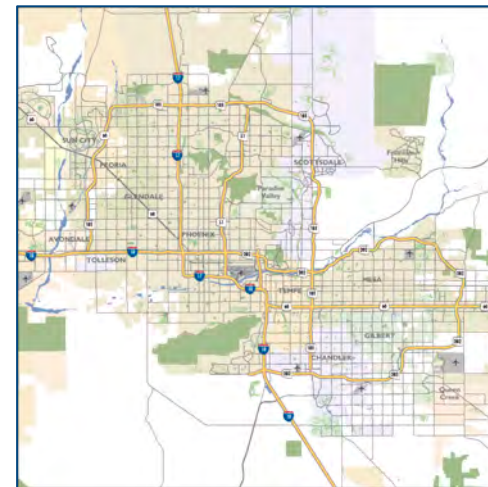
As with our layout templates, consider these standards to be starting points, as a great deal of artistic license can be employed in the creation of any map.



Gray



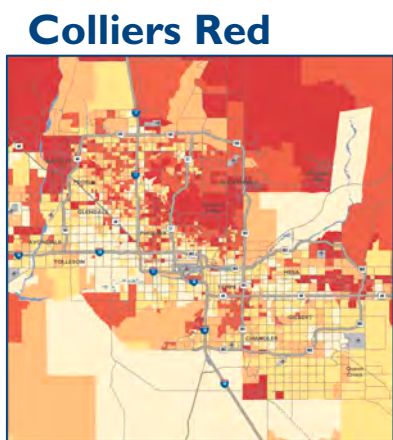
7 Color



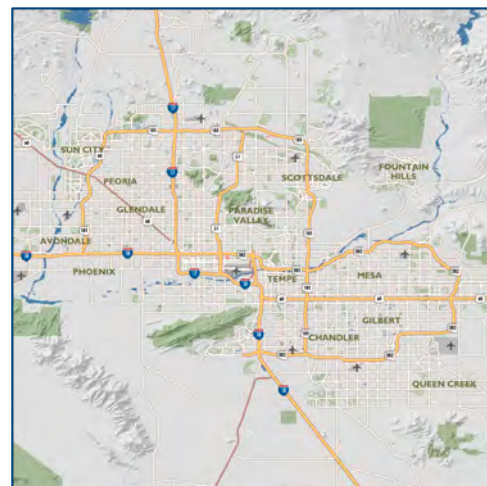
7 Color Light



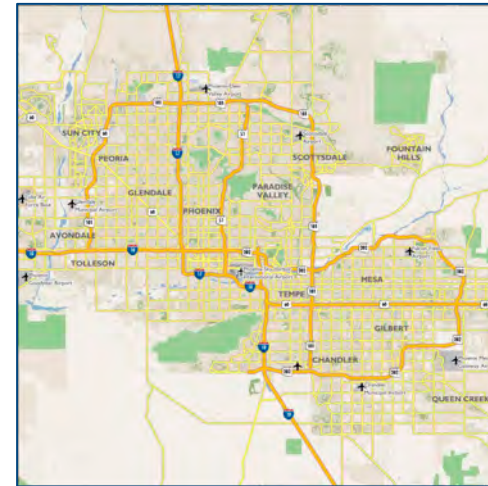
Yellow



Colliers Red



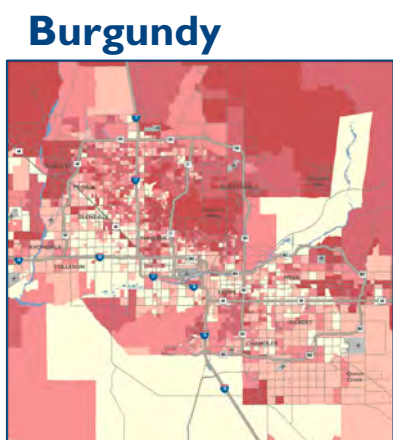
Relief



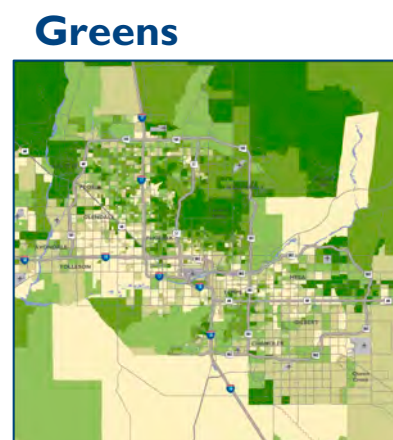
Google Mimic



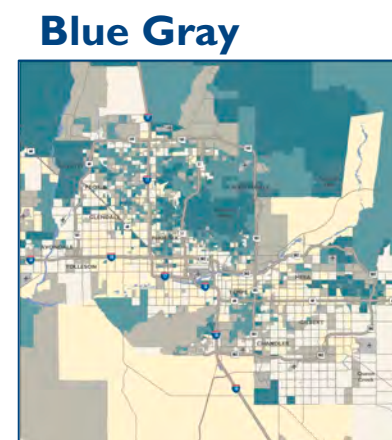
Aerial



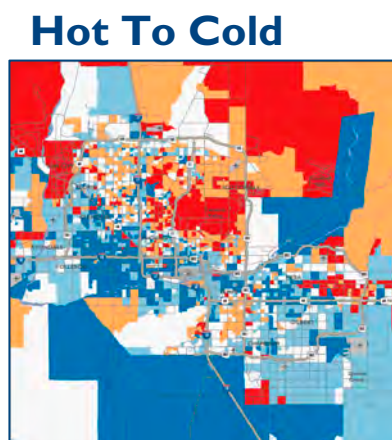
Burgundy



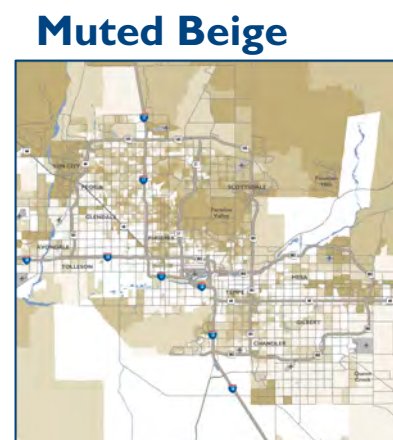
Greens



Blue Gray



Hot To Cold



Muted Beige

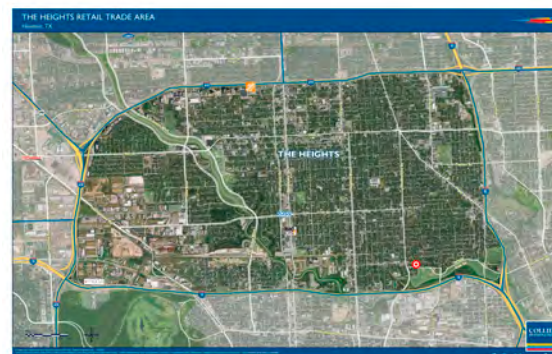
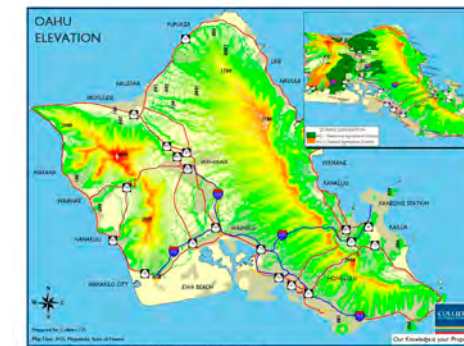
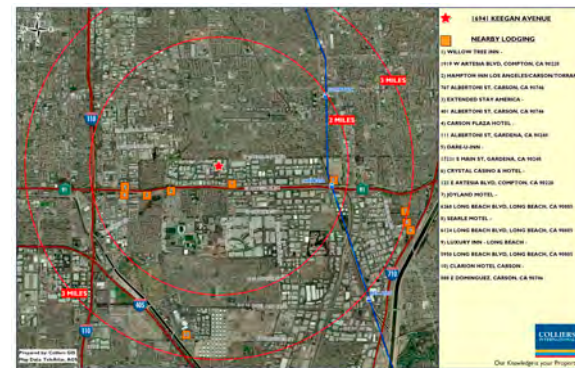
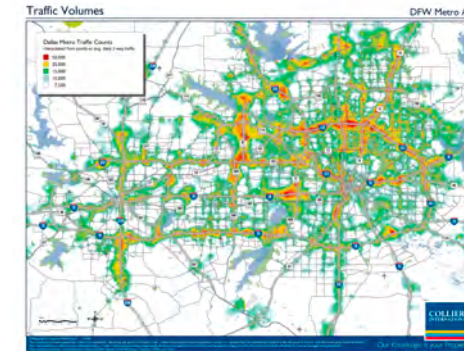
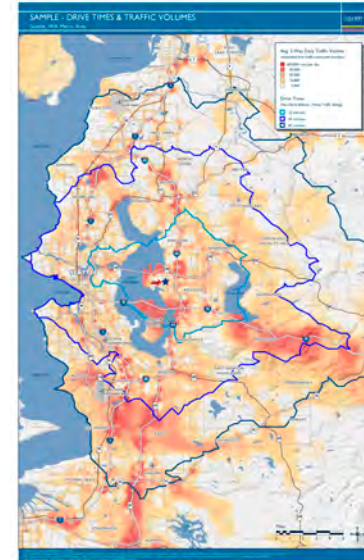
# Colliers GIS MAPPING SAMPLE BOOK

## Site / Area Maps

The term “site map” or area map” is rather vague. While intended to describe maps that show a site, trade area, or market and their surroundings; why wouldn't any site map that included a demographic layer still be a site map?

Think of these as simpler maps, that aren't necessarily trying to enable the reader to do any complex analysis. These maps describe an area, and visually communicate what's there, the relationships between what's there, and may allow the reader to infer why or how from the data in the map.

These maps can include a variety of data and map types such as a very simple brochure map with streets and a site arrow; an amenities, competition, or available properties map; a traffic count and drive time layer from a site, or a parcel map.



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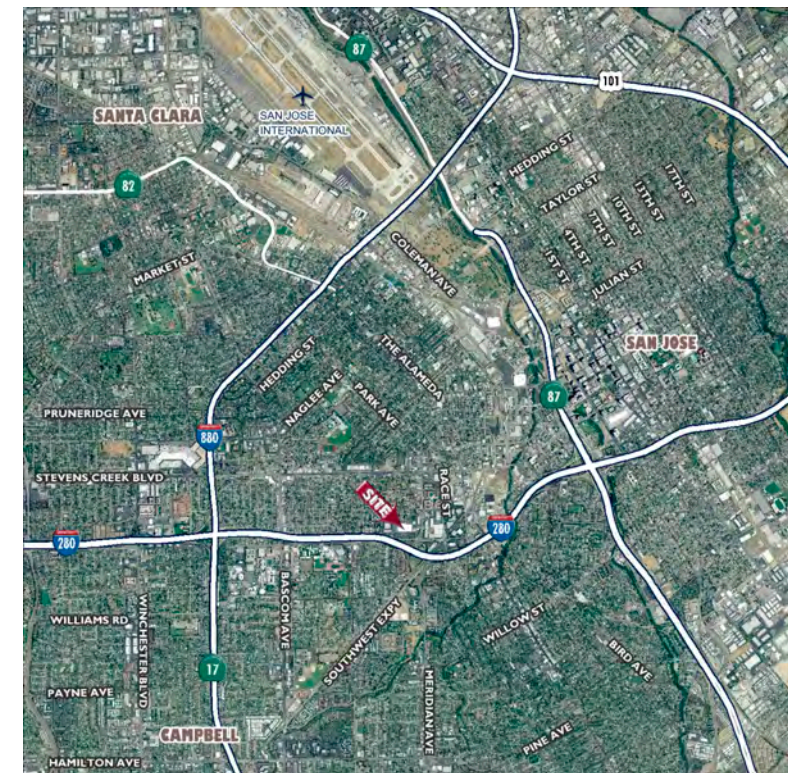
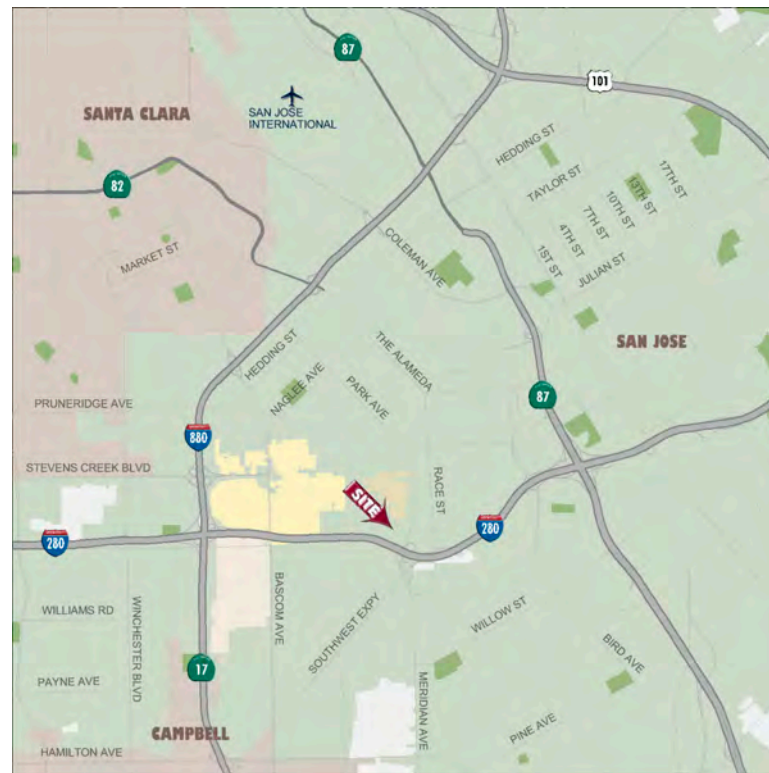
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## Brochure Map

Typically fit within a brochure or flyer. Brochure maps can potentially contain more information than shown here, depending on the room available.



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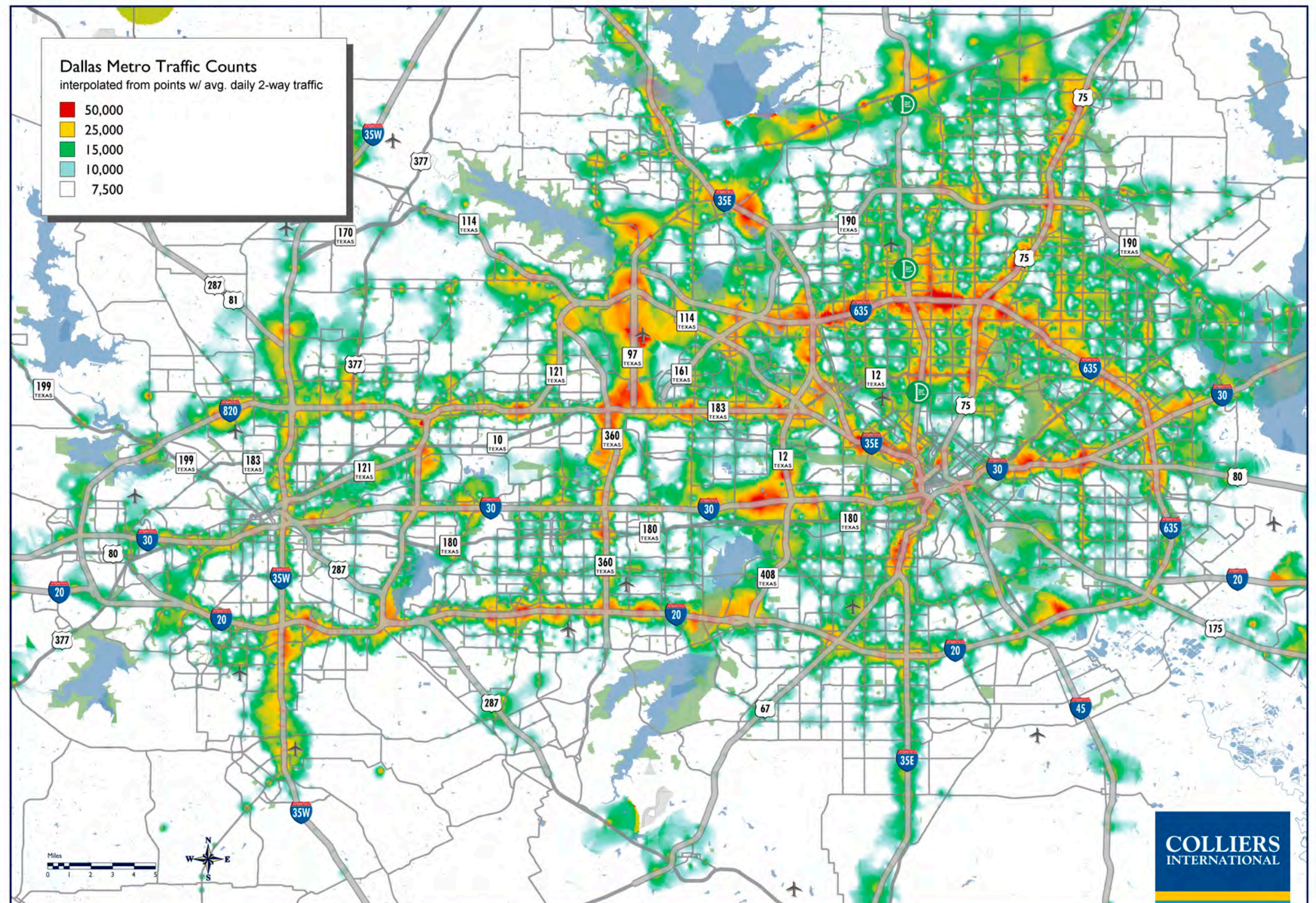
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## Traffic Map

The “heat map” surface is interpolated values derived from actual counting locations. On a more zoomed in map, you could show and label these points.

## Traffic Volumes

DFW Metro Area



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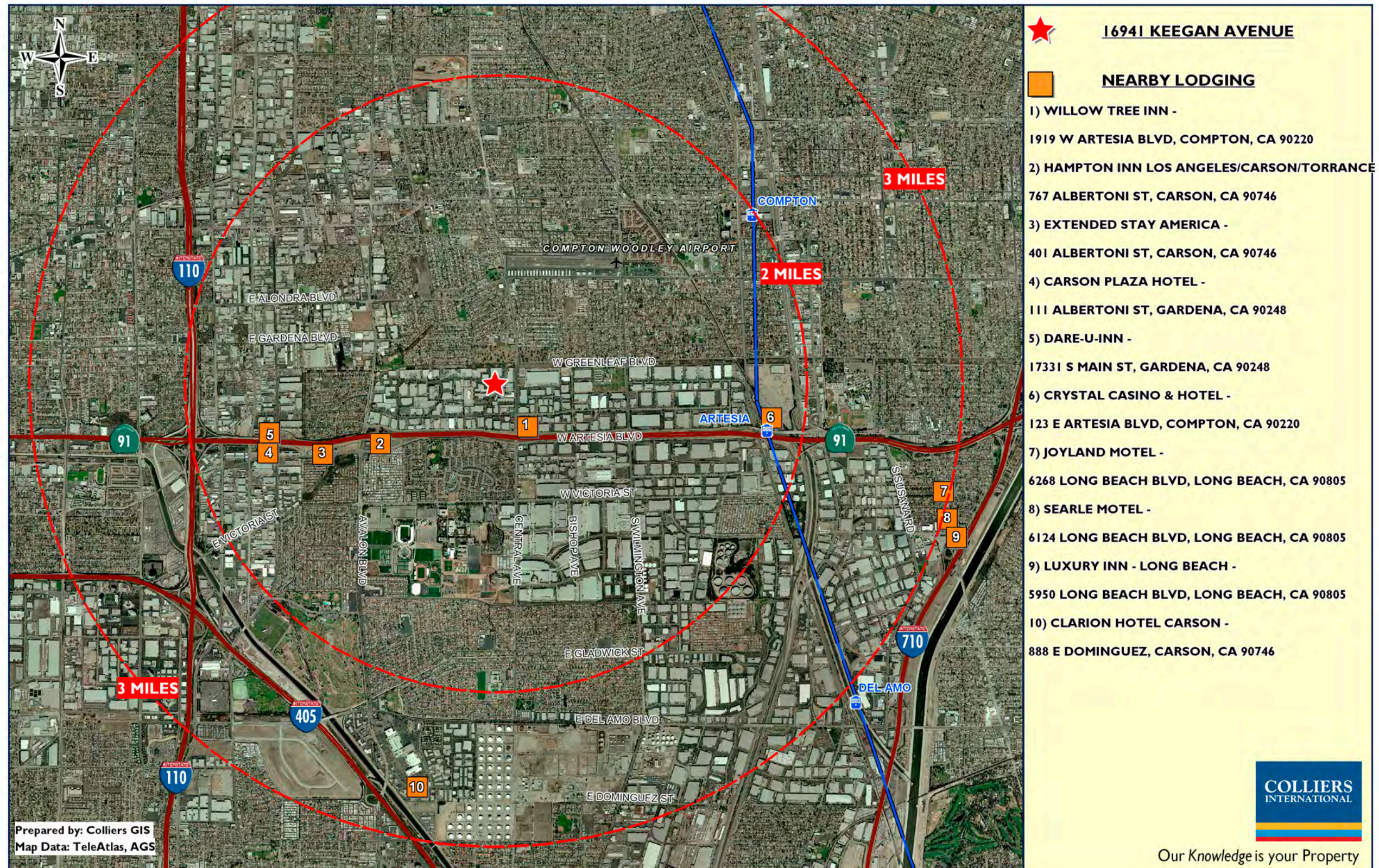
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### Site Map

This focuses on a particular property with selected amenities, in this case nearby lodging, with a 2 & 3 mile radius around the property.



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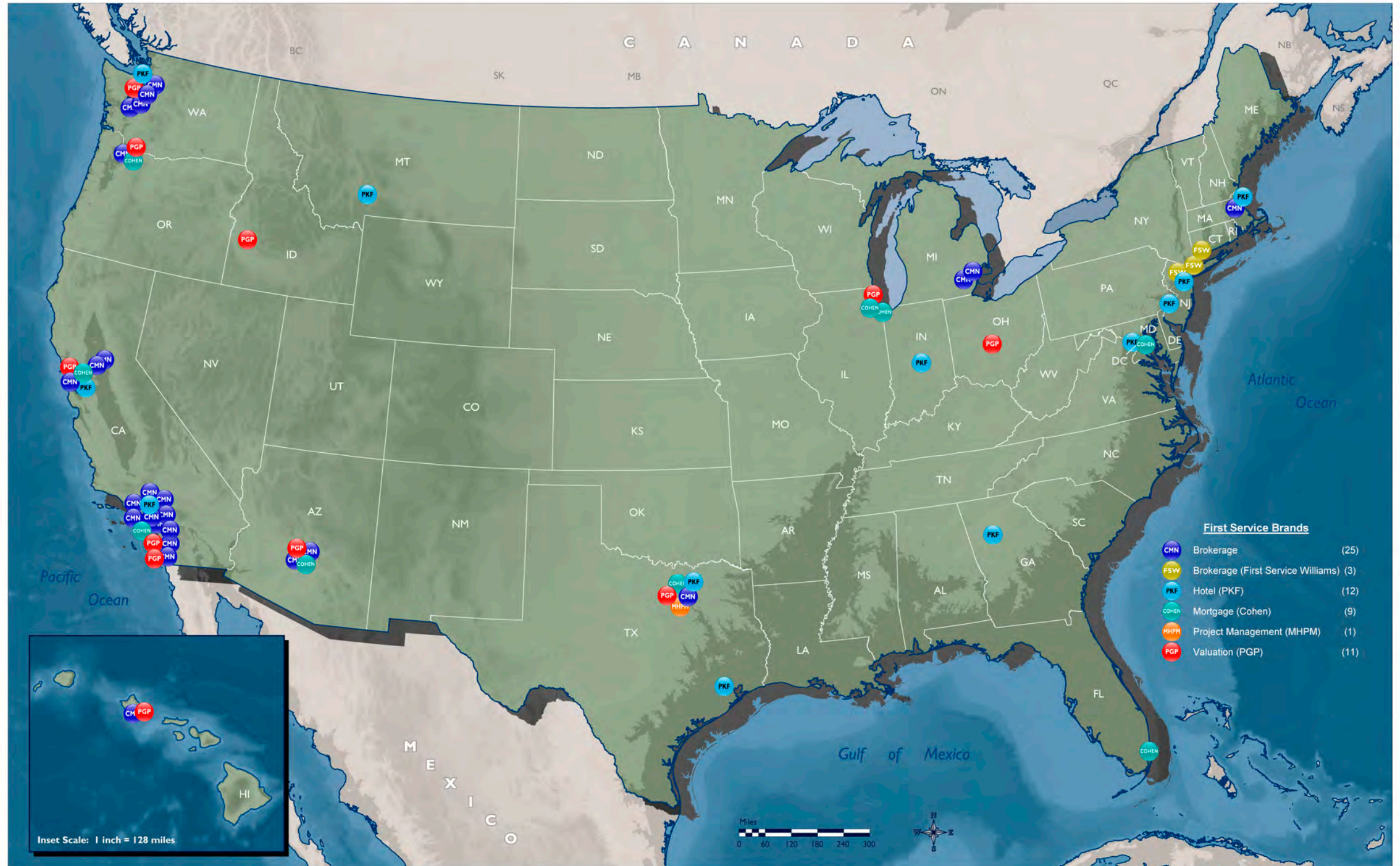
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## Company Locations

This example shows First Service brands' locations in the USA, and contains an elevation layer that creates an appealing effect.



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## Company Locations

This example shows company locations as logos, with a different type of elevation layer on the map.

## Rudy's “Country Store” & Bar-B-Q®



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Our Knowledge is your Property



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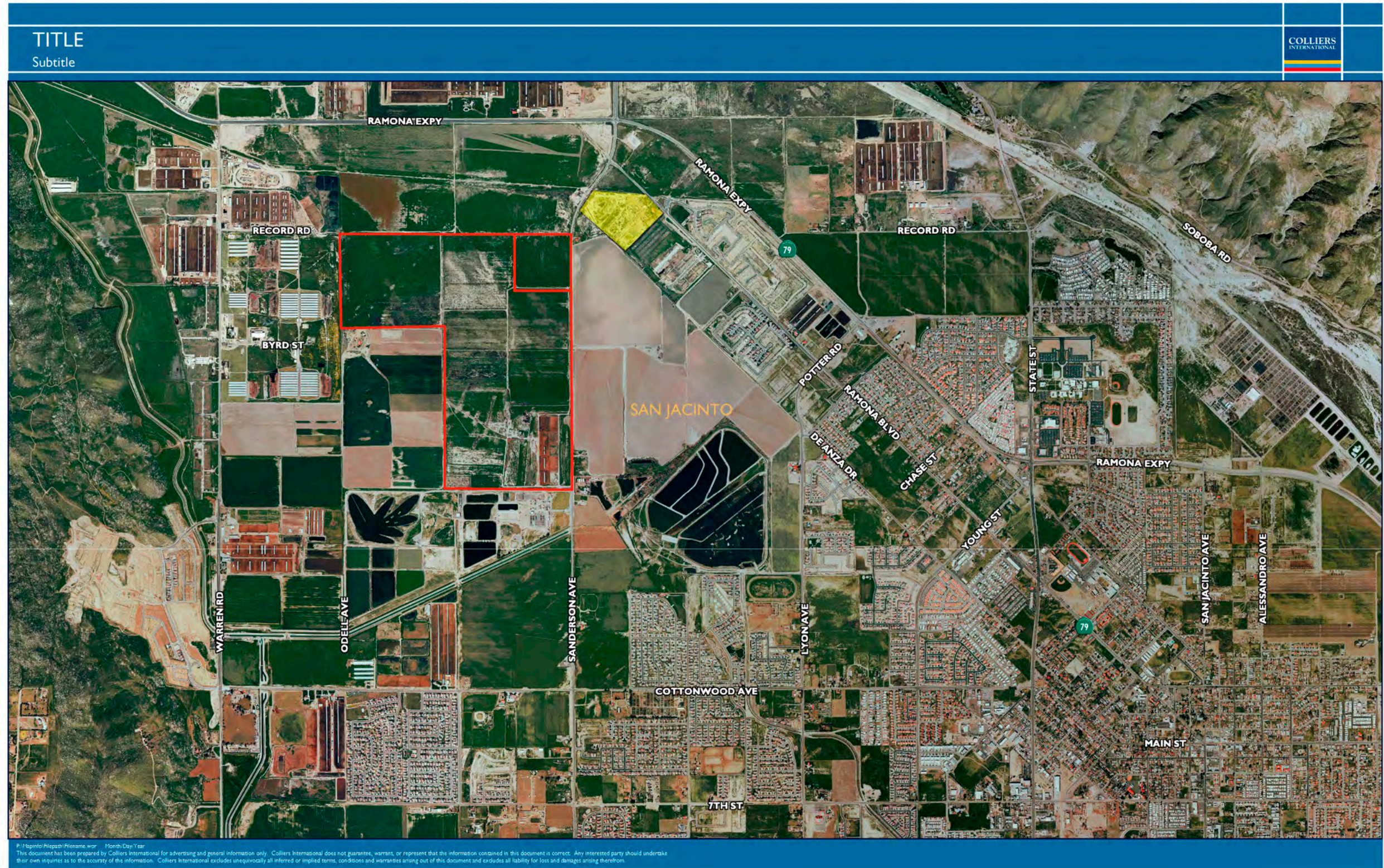
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### Highlighted Property Map

This simple map shows a highlighted subject parcel, and nearby parcels of interest.



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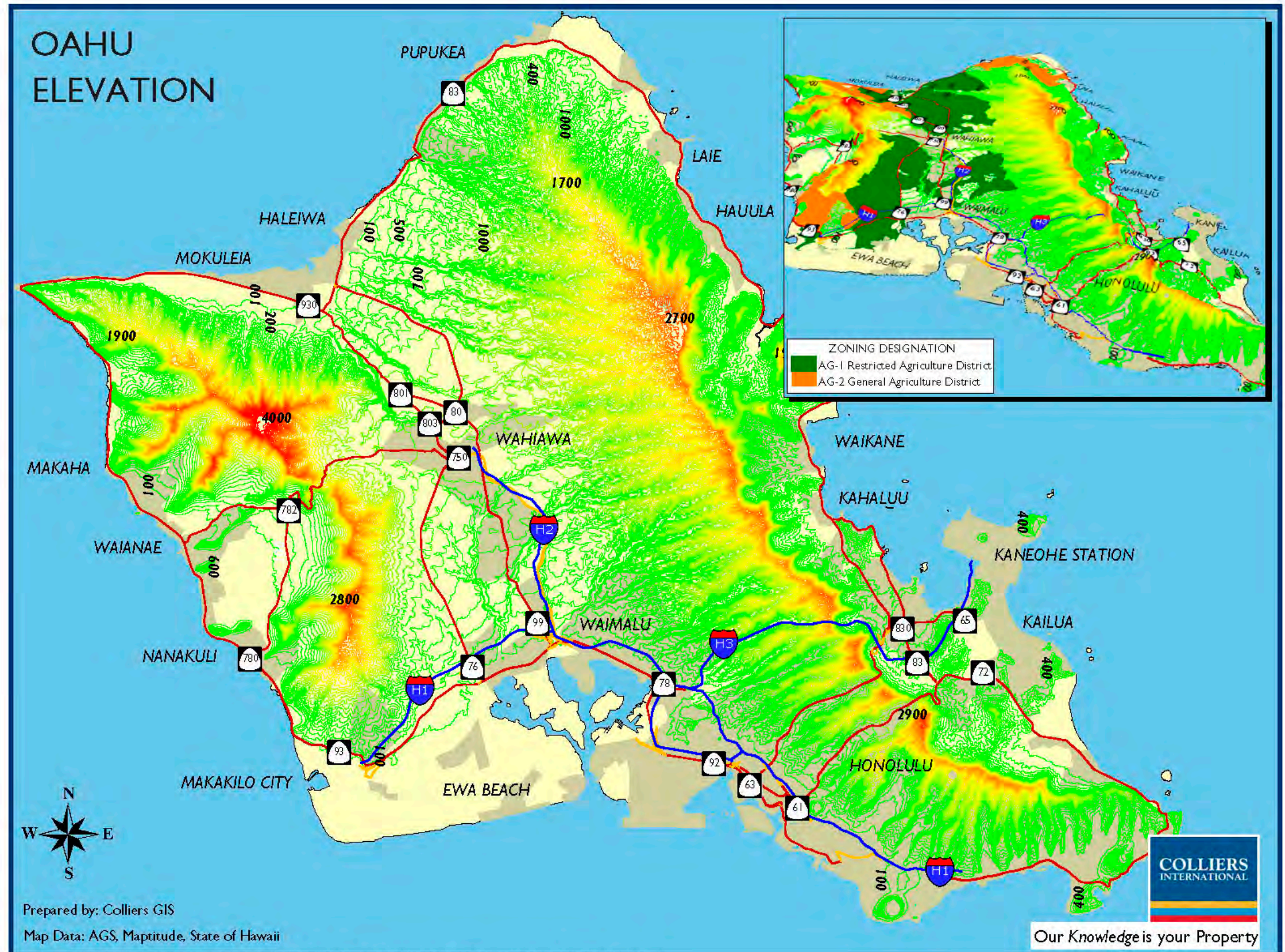
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## Regional / Area map

This map actually uses elevation as the main feature, with the purpose to help identify large agricultural tracts of land not located on steep slopes.



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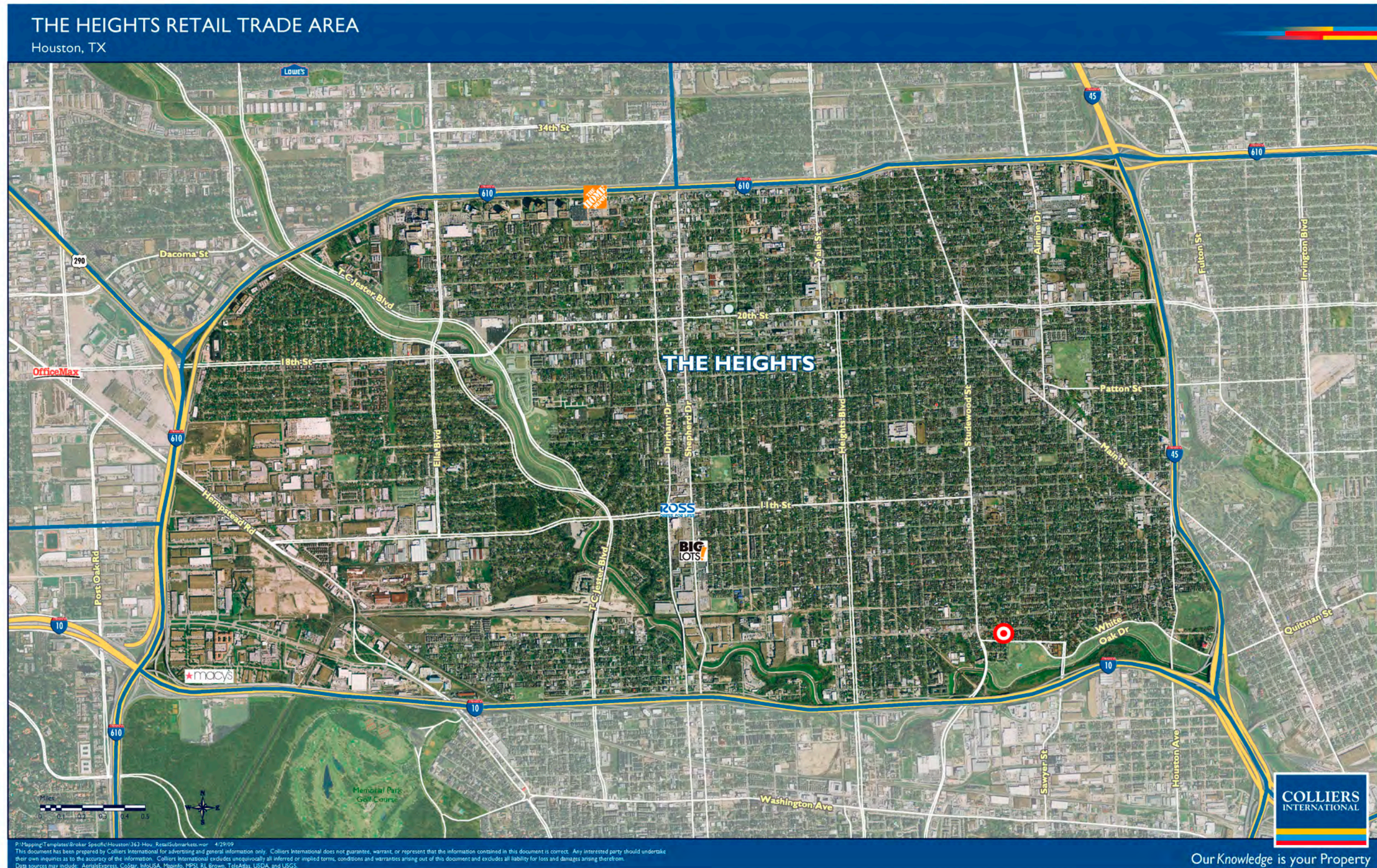
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## Trade Area Map

This map highlights a Houston retail trade area by using a mask that fades out the surrounding areas. It also contains big box retail locations. Subsequent maps in this package showed block group demographic data for the submarket.



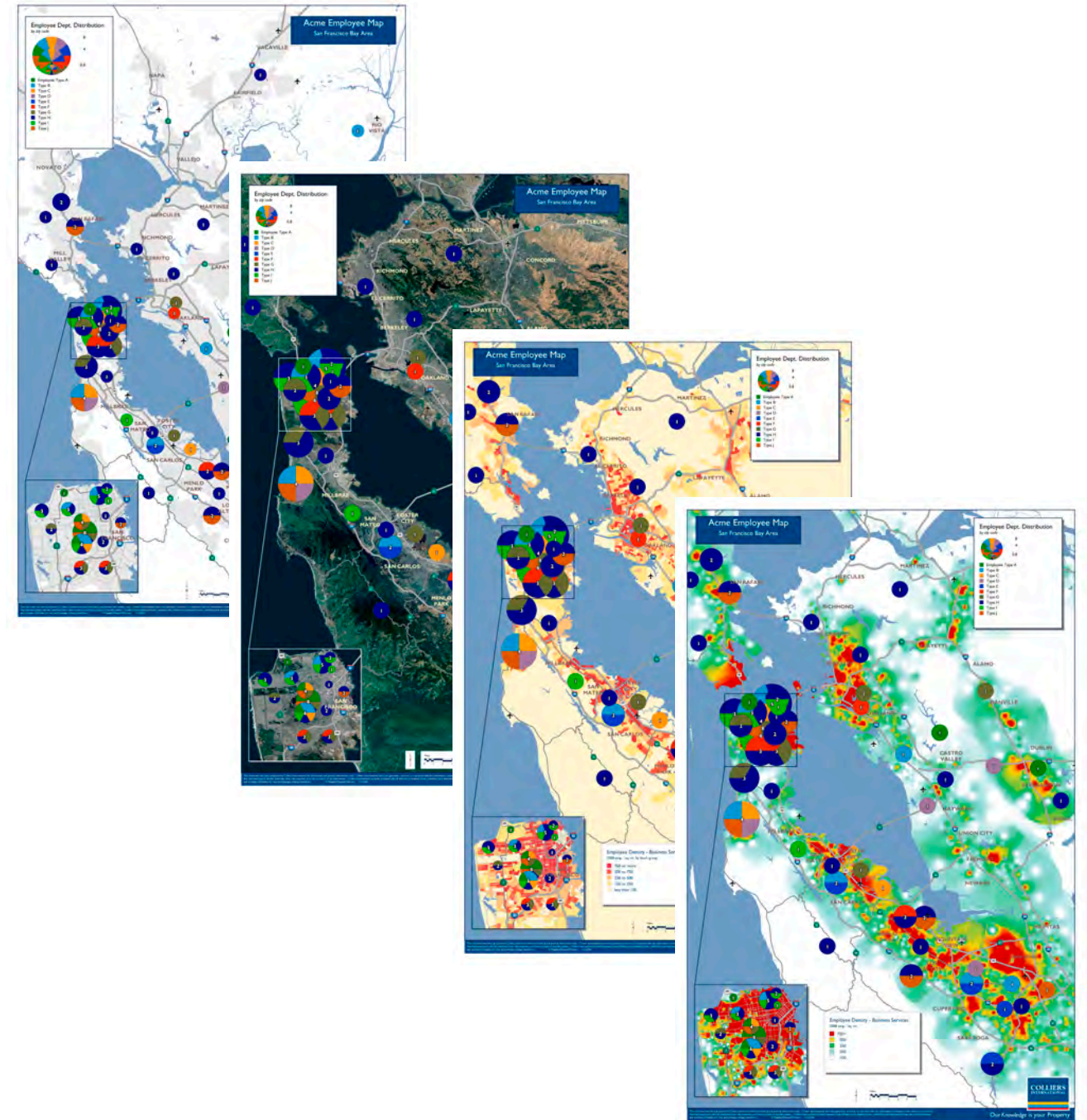
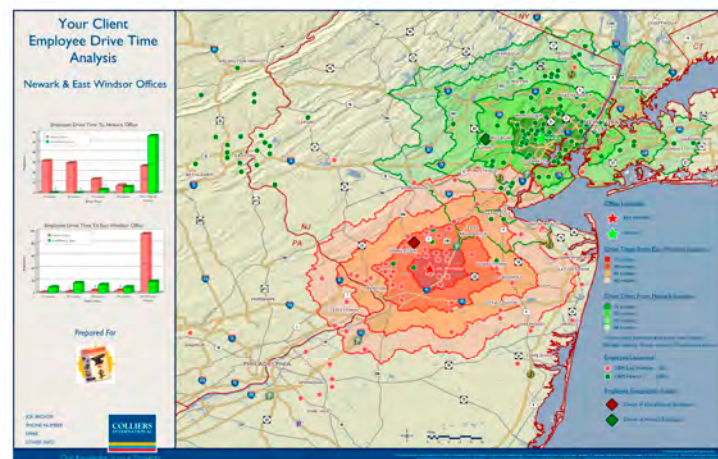
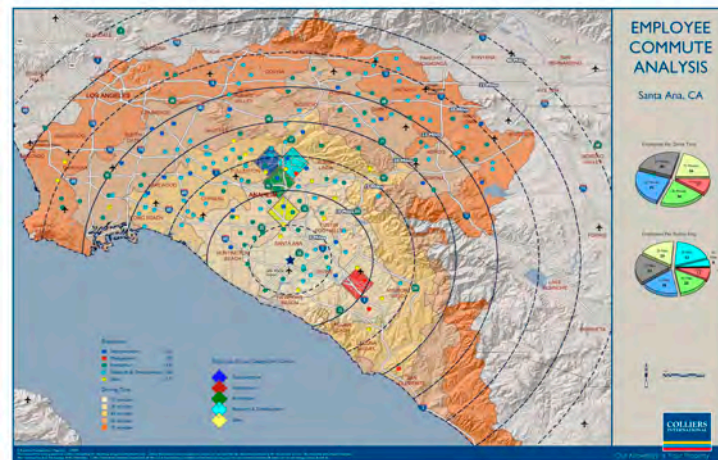
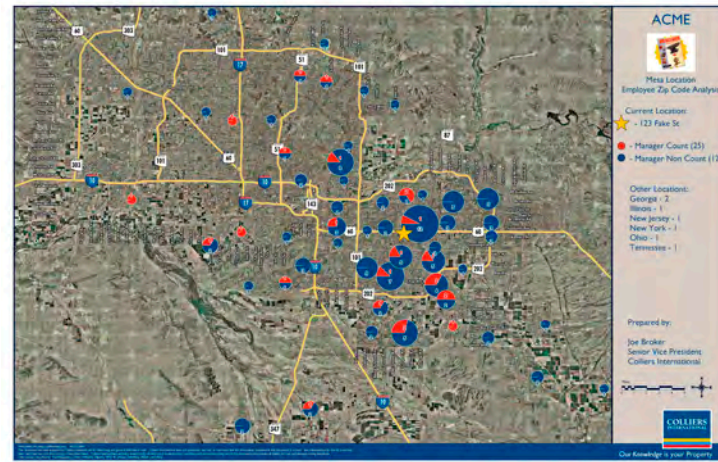
# Colliers GIS MAPPING SAMPLE BOOK

## Employee / Employment Analysis

These types of maps are useful for companies that are relocating, expanding, or consolidating locations based on existing employees and/or the existing, available labor pool.

Employee locations can be mapped out to their zip code or home address. Commute times can be calculated for each employee to each location. Employees can be categorized by type, pay scale, or other critical factors. An analysis can then be done to calculate the impacts of the real estate decisions to be made. These impacts could range from creating potential employee turnover based on extended commutes, or organizing groups of employees more efficiently based on roles, locations, and managers. You can also utilize demographic data to identify populations of potential labor force based on employment type, education level, or other factors.

Similar analysis could be done with other types of data. For example, a company could find efficiencies and cost savings by optimizing the locations of their production, warehousing, and distribution facilities.



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## Employee / Employment Analysis

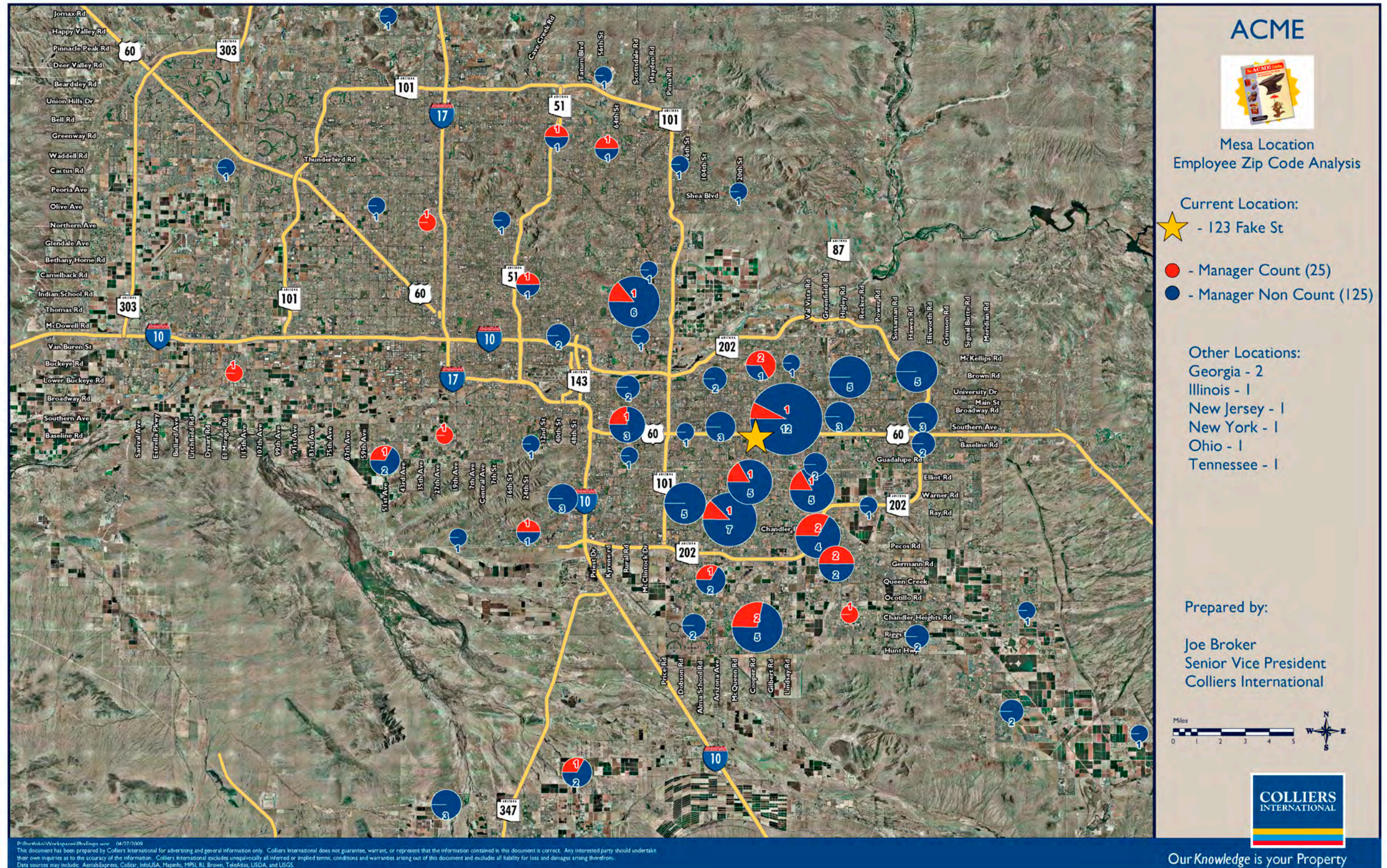
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### Employee Zip Code Map

This shows the distribution of manager & non-manager employees relative to a current location.



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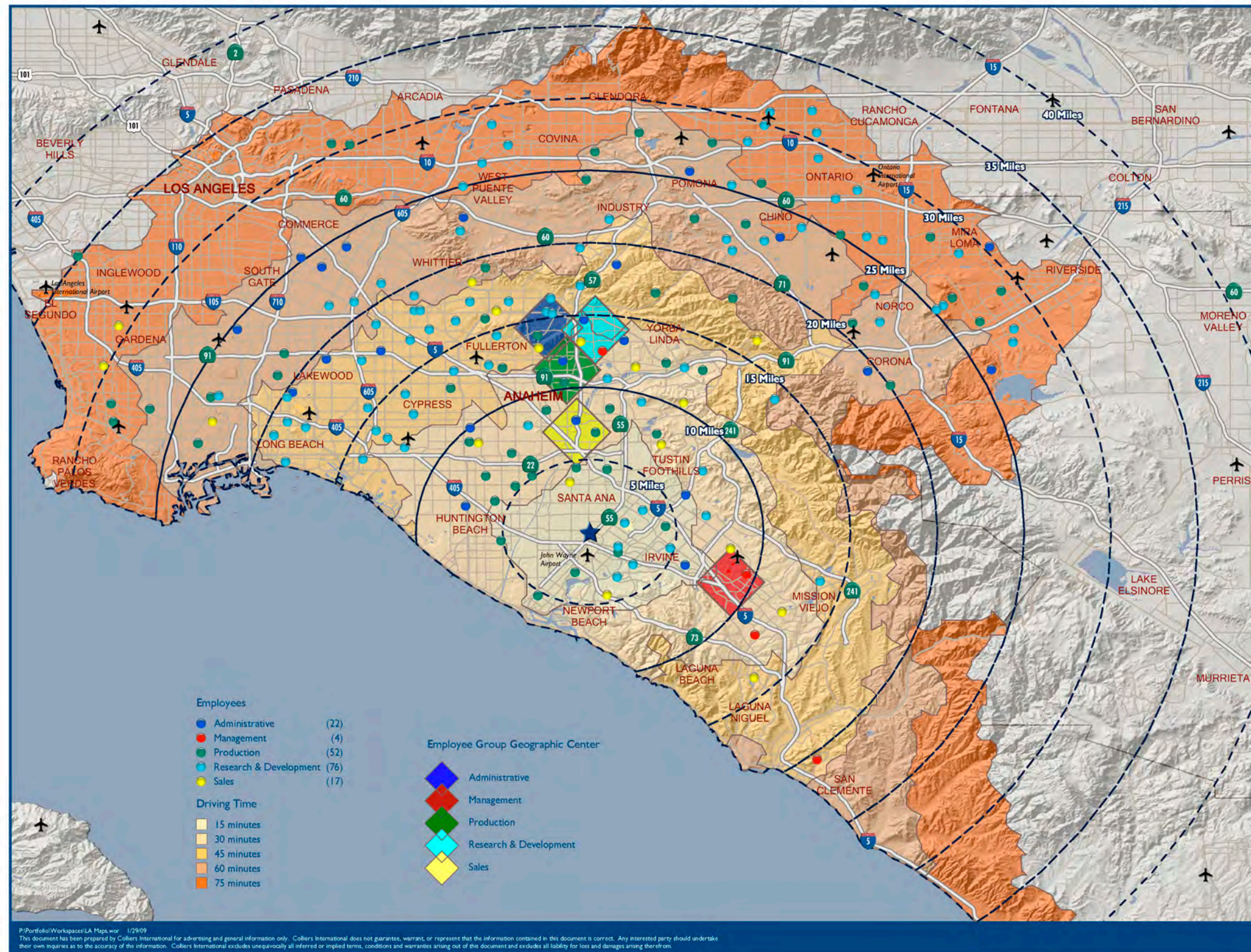
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### Employee Locations & Drive Time

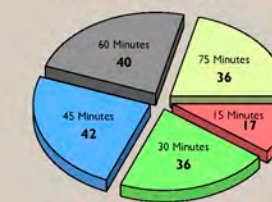
This map adds drive time polygons, radius rings, geographical centers of each employee group, and graphs the distribution of employees within the drive times and radius rings



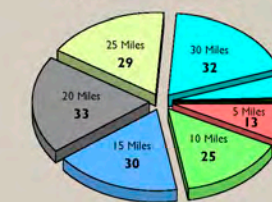
## EMPLOYEE COMMUTE ANALYSIS

Santa Ana, CA

Employees Per Drive Time



Employees Per Radius Ring



Our Knowledge Is Your Property

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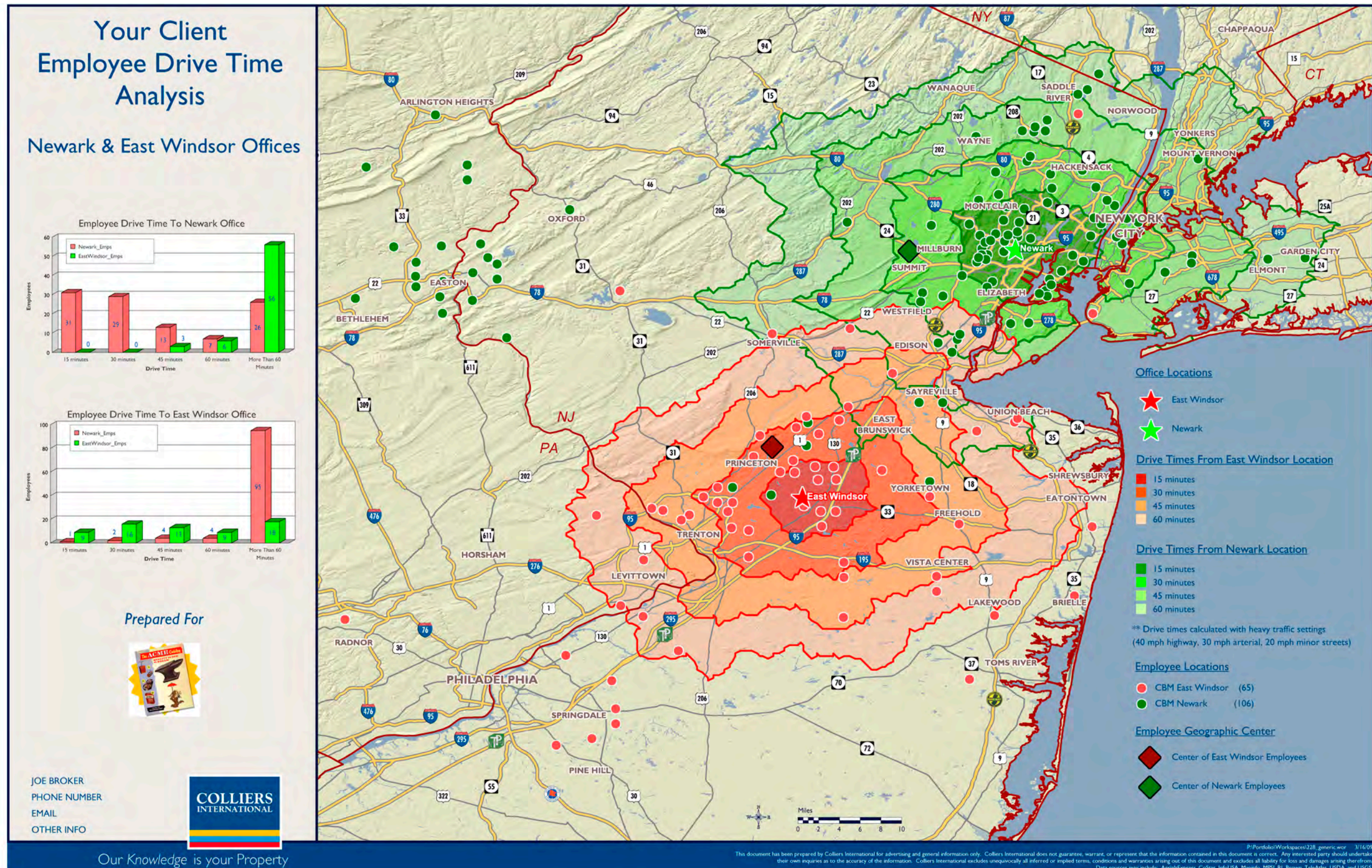
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## Employee Locations & Drive Time

This example compares the commutes of existing employees who work at two existing locations. Further analysis included potential locations.



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## Employee / Employment Analysis

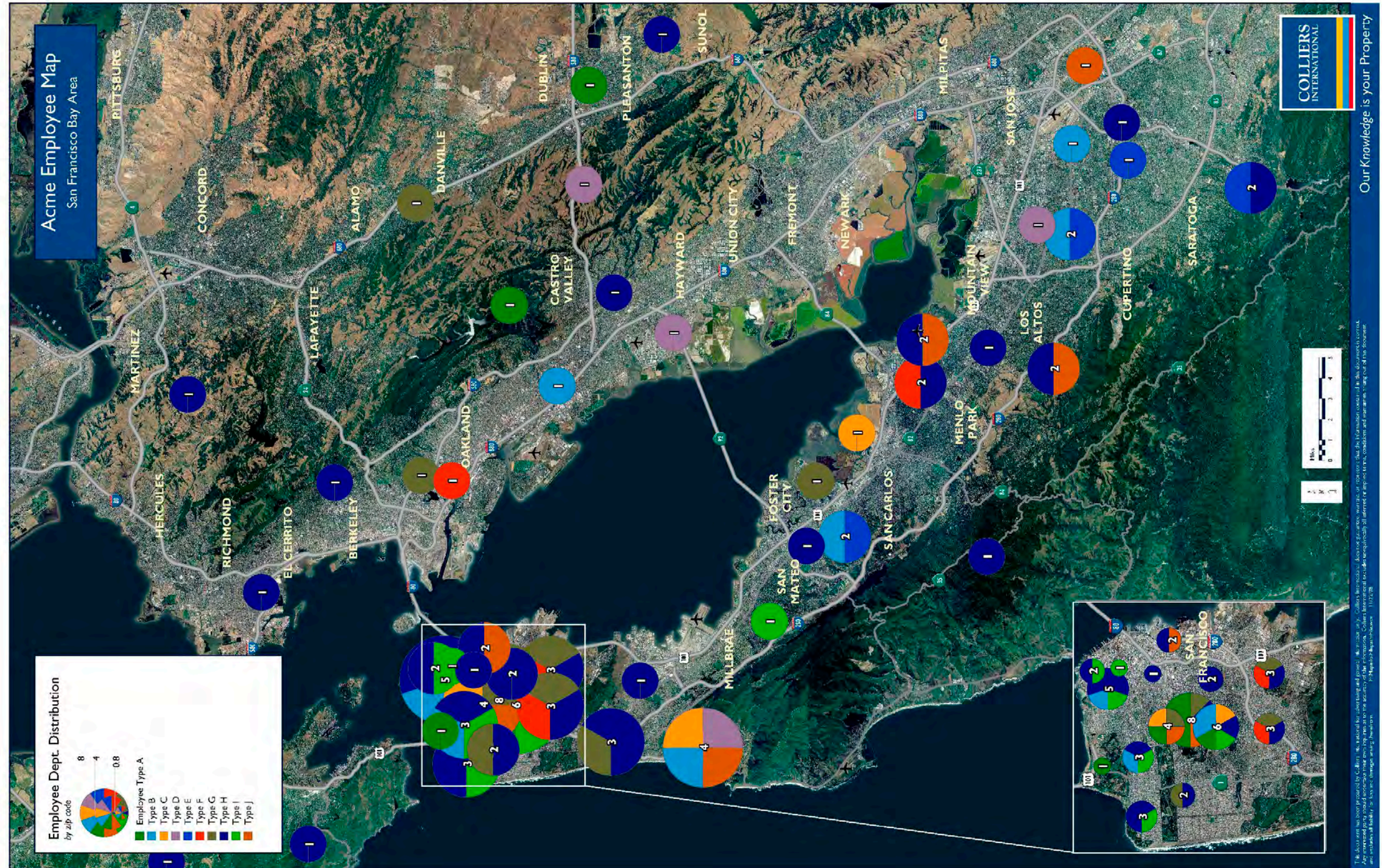
These types of maps are useful for companies that are relocating, expanding, or consolidating locations based on existing employees and/or the existing, available labor pool.

Employee locations can be mapped out to their zip code or home address. Commute times can be calculated for each employee to each location. Employees can be categorized by type, pay scale, or other critical factors. An analysis can then be done to calculate the impacts of the real estate decisions to be made. These impacts could range from creating potential employee turnover based on extended commutes, or organizing groups of employees more efficiently based on roles, locations, and managers. You can also utilize demographic data to identify populations of potential labor force based on employment type, education level, or other factors.

Similar analysis could be done with other types of data. For example, a company could find efficiencies and cost savings by optimizing the locations of their production, warehousing, and distribution facilities.

### Employee Locations

This first map of a series shows existing employees' locations by job category over an aerial photograph.



# Colliers GIS MAPPING SAMPLE BOOK

## Employee / Employment Analysis

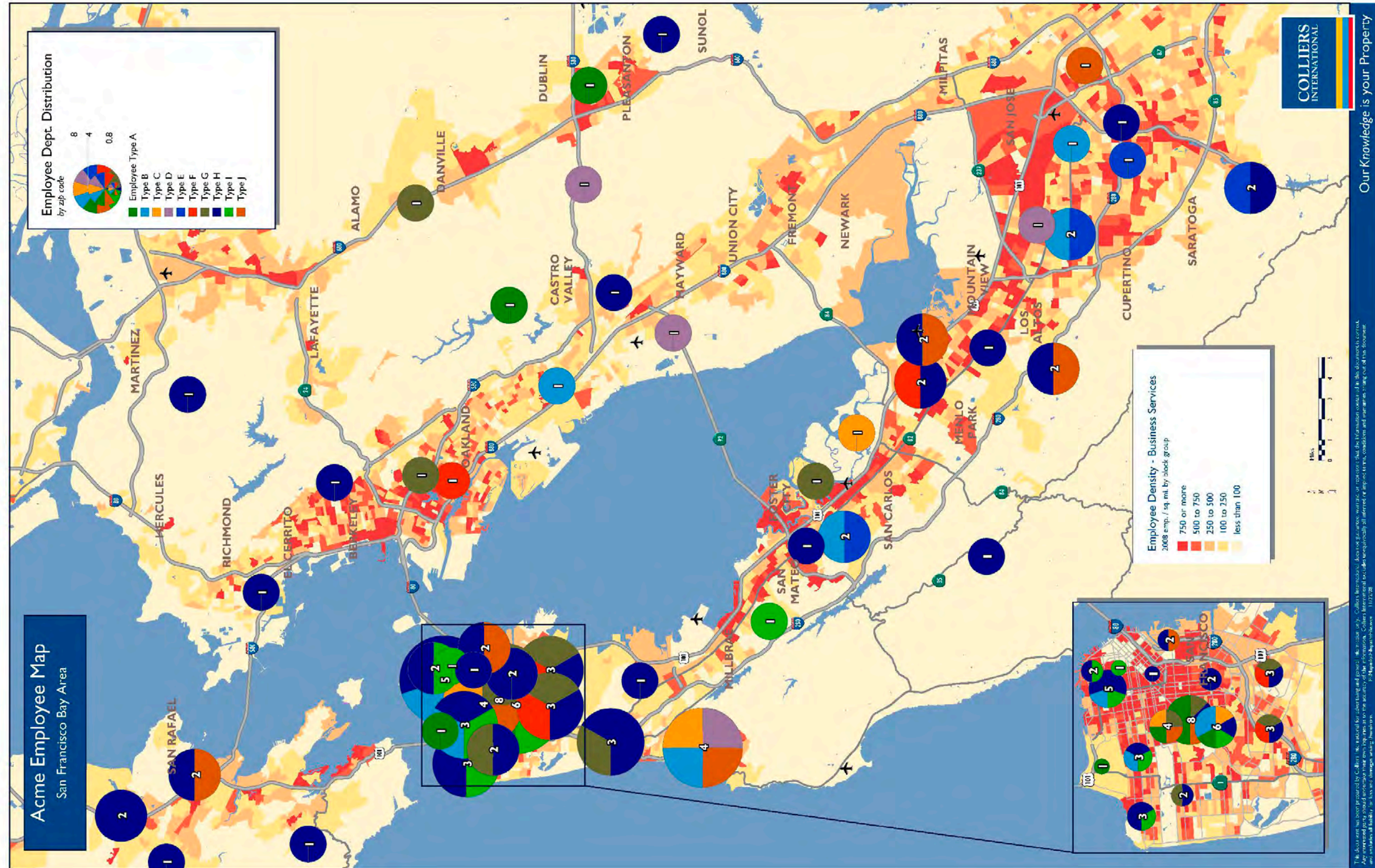
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Similar analysis could be done with other types of data. For example, a company could find efficiencies and cost savings by optimizing the locations of their production, warehousing, and distribution facilities.

### Employee Locations

This adds a block group thematic showing the concentrations of available workforce that match the type the client would be interested in hiring.



# Colliers GIS MAPPING SAMPLE BOOK

## Employee / Employment Analysis

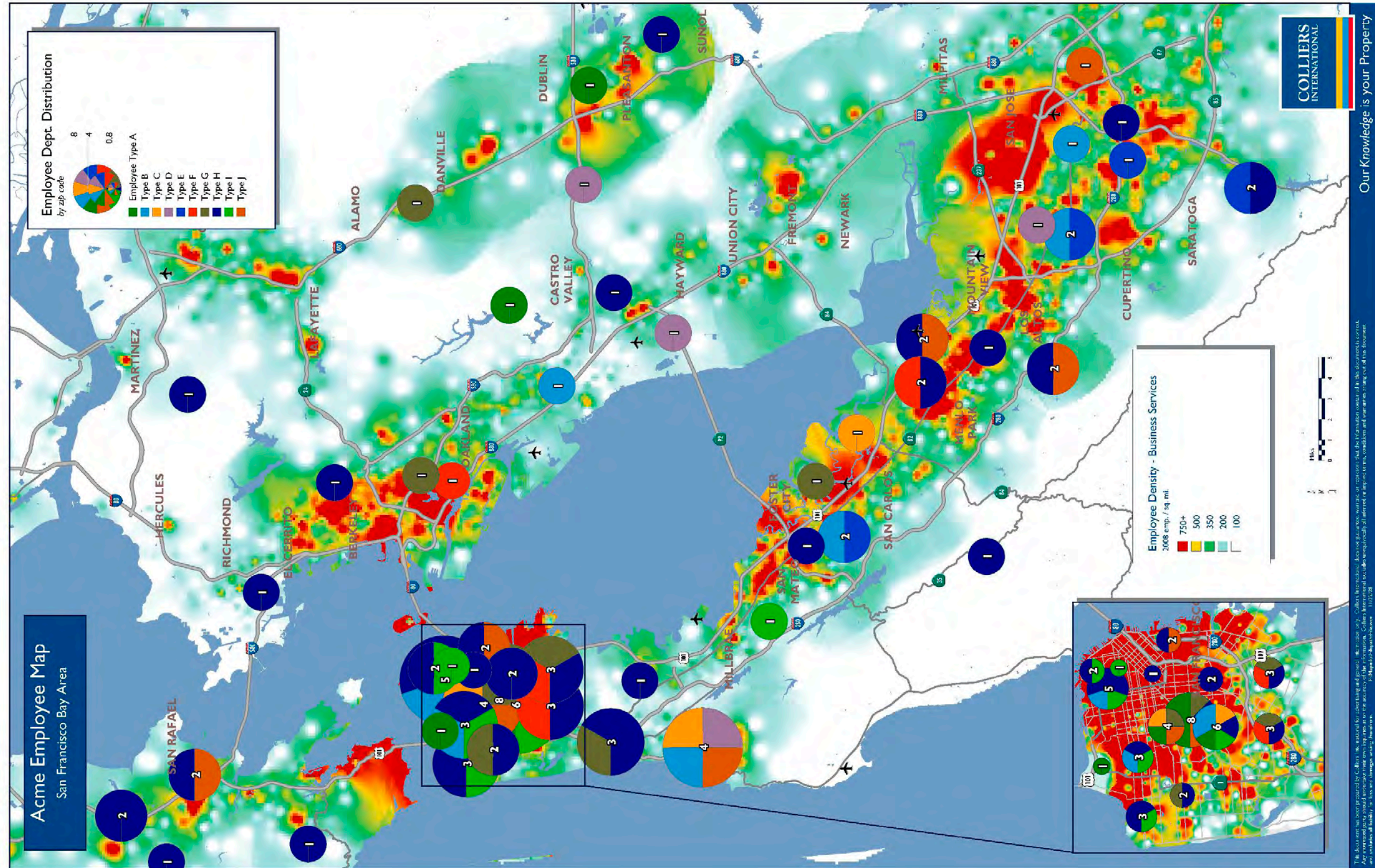
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Similar analysis could be done with other types of data. For example, a company could find efficiencies and cost savings by optimizing the locations of their production, warehousing, and distribution facilities.

### Employee Locations

This is the same data as the previous map, but this time the potential work force thematic is shown as a grid surface or “heat” map.



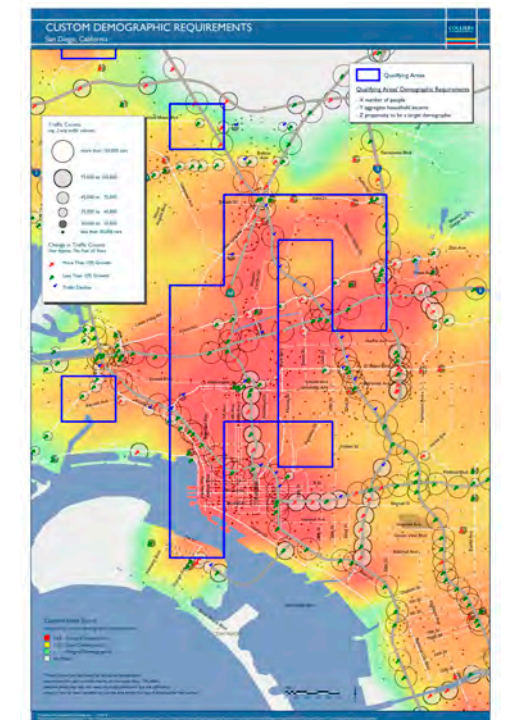
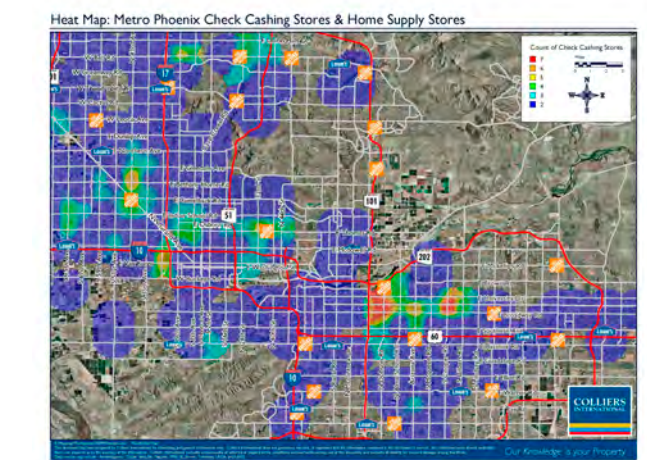
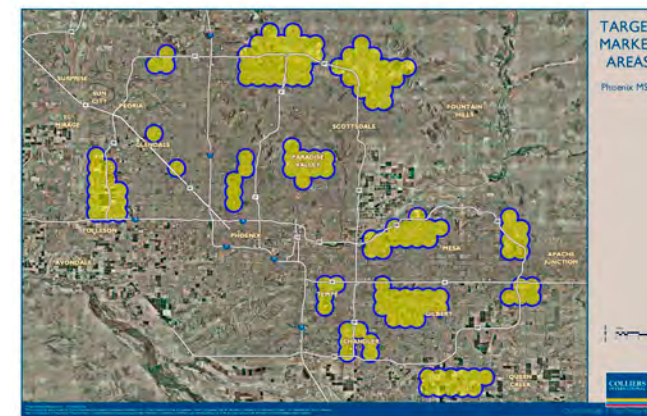
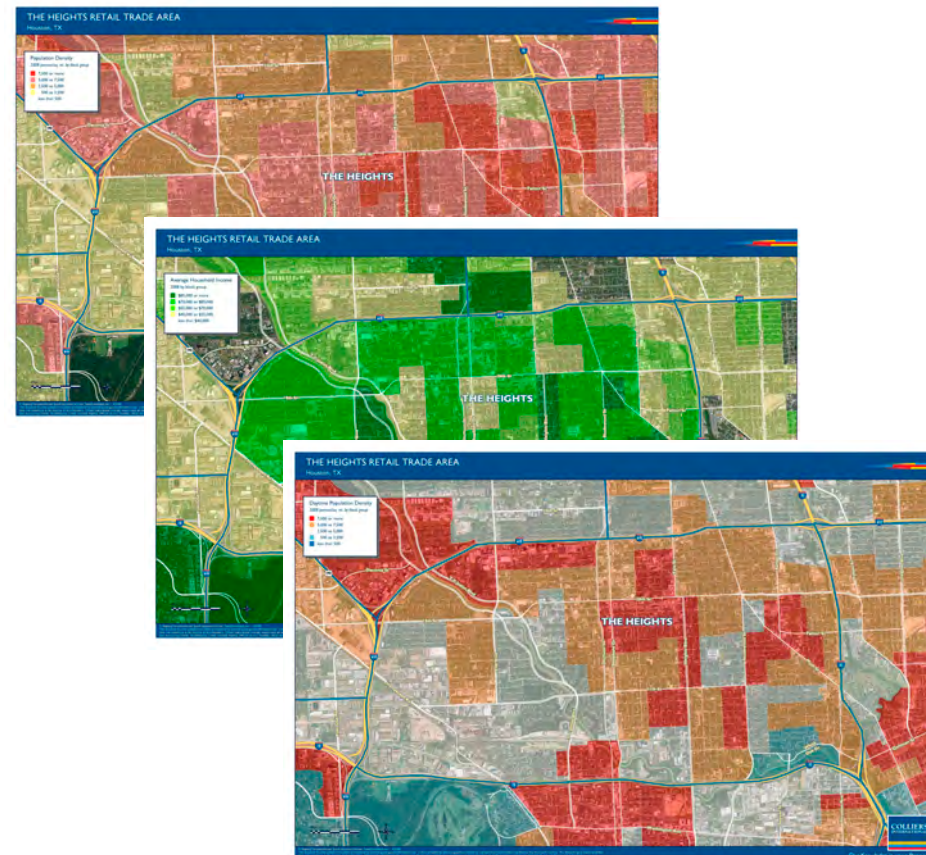
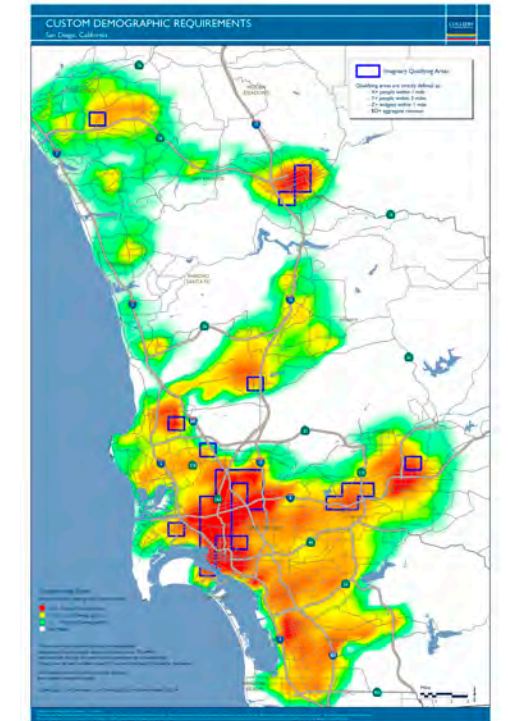
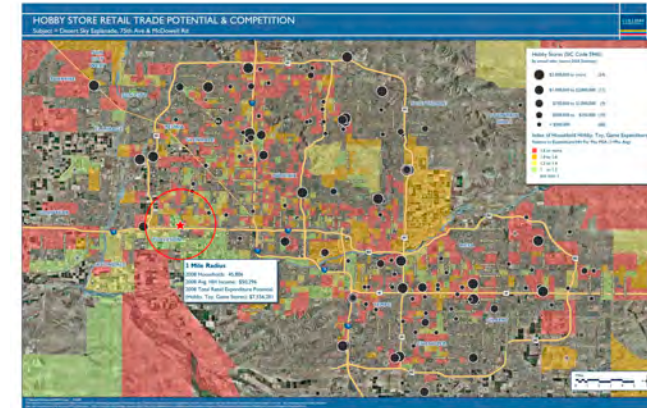
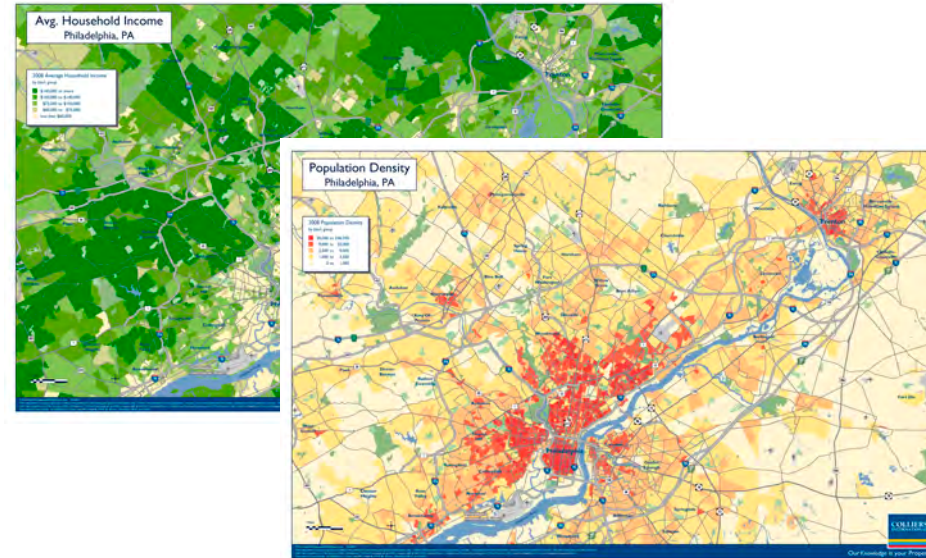
# Colliers GIS MAPPING SAMPLE BOOK

## Demographic Analysis

Demographic data consists of census data, census derived current year estimates, and five year projections for thousands of variables. The data is available at multiple levels of geography (such as zip code or county) down to the smallest unit – the block group.

In addition to the raw demographic data reported by the census, our datasets include business summary data (employees, sales, etc...), retail trade and consumer expenditure data, and segmentation data. Segmentation data combines multiple demographic and other variables to create a new set of data that divides the population into approximately 60 groups that exhibit unique tendencies and behavior. This is particularly useful for retail applications where customer data is available.

Demographic maps can vary from simple maps describing an area with a single variable, to very complex projects, multivariate modeling, trade area generation, and predictive analytics.



## Demographic Analysis

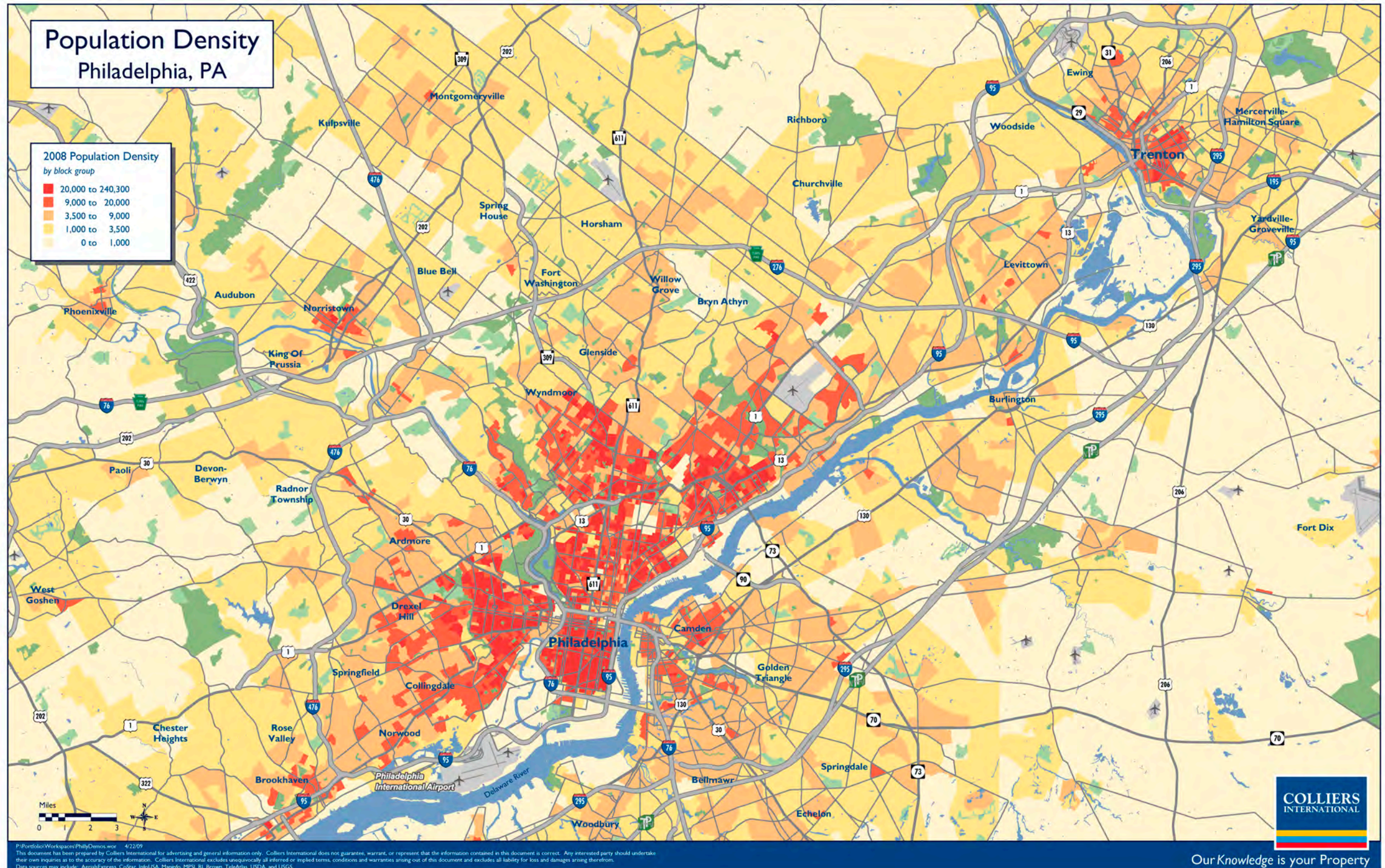
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### Single Variable Demographic Maps

Demographic data can be represented in many various ways, both visually and statistically. Variables can be shown by themselves, combined to create new calculations, or indexed/ranked an average value. This is a simple single variable shaded thematic showing population density by block group.



## Demographic Analysis

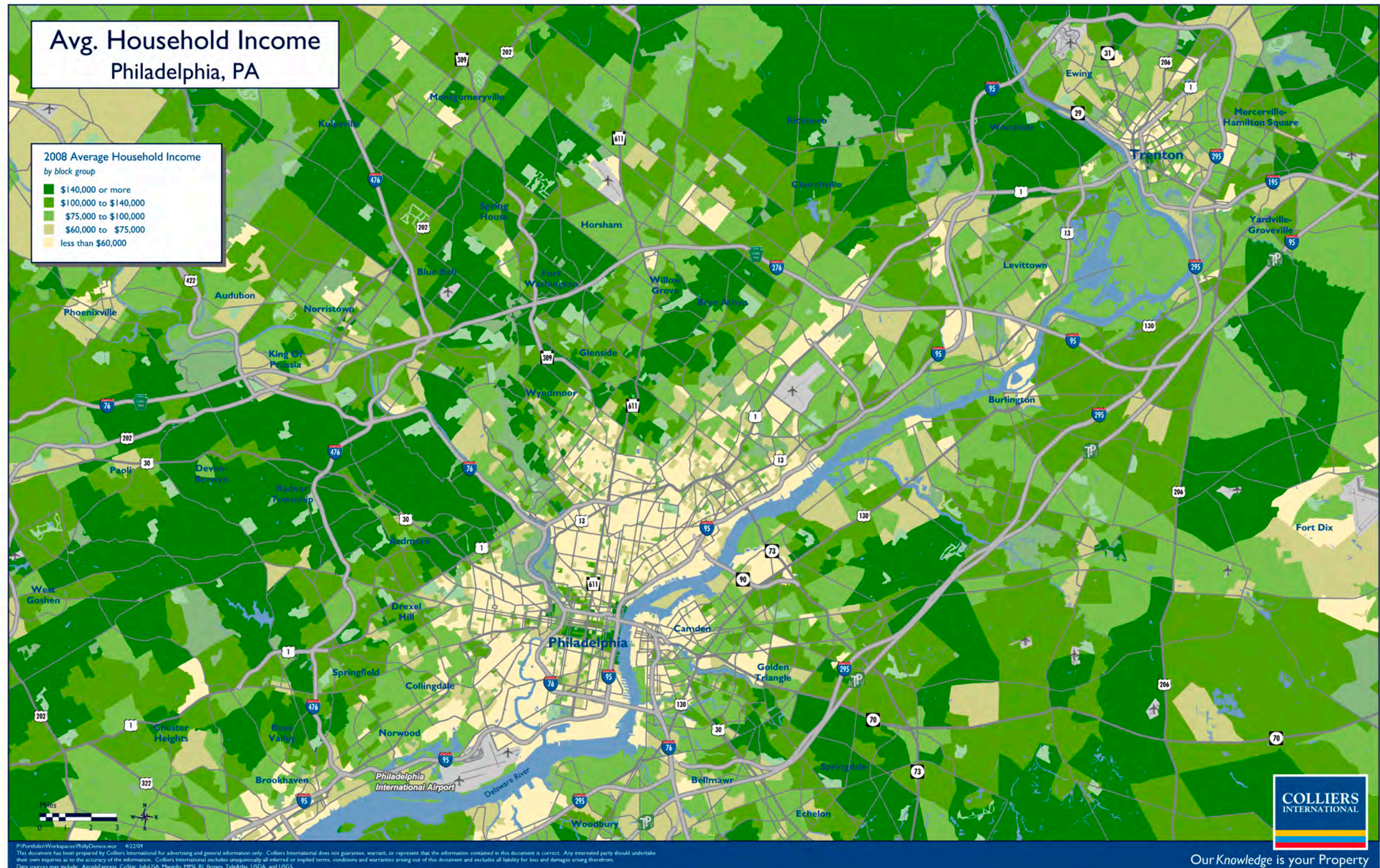
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### Single Variable Demographic Maps

It is common to request/deliver a series of demographic maps of the same area for a client, with an income map such as this being a common counterpart to a population density map. This is a case where you could alternatively combine these variables to create a single map showing aggregate income (total \$ in an area).



# Colliers GIS MAPPING SAMPLE BOOK

## Demographic Analysis

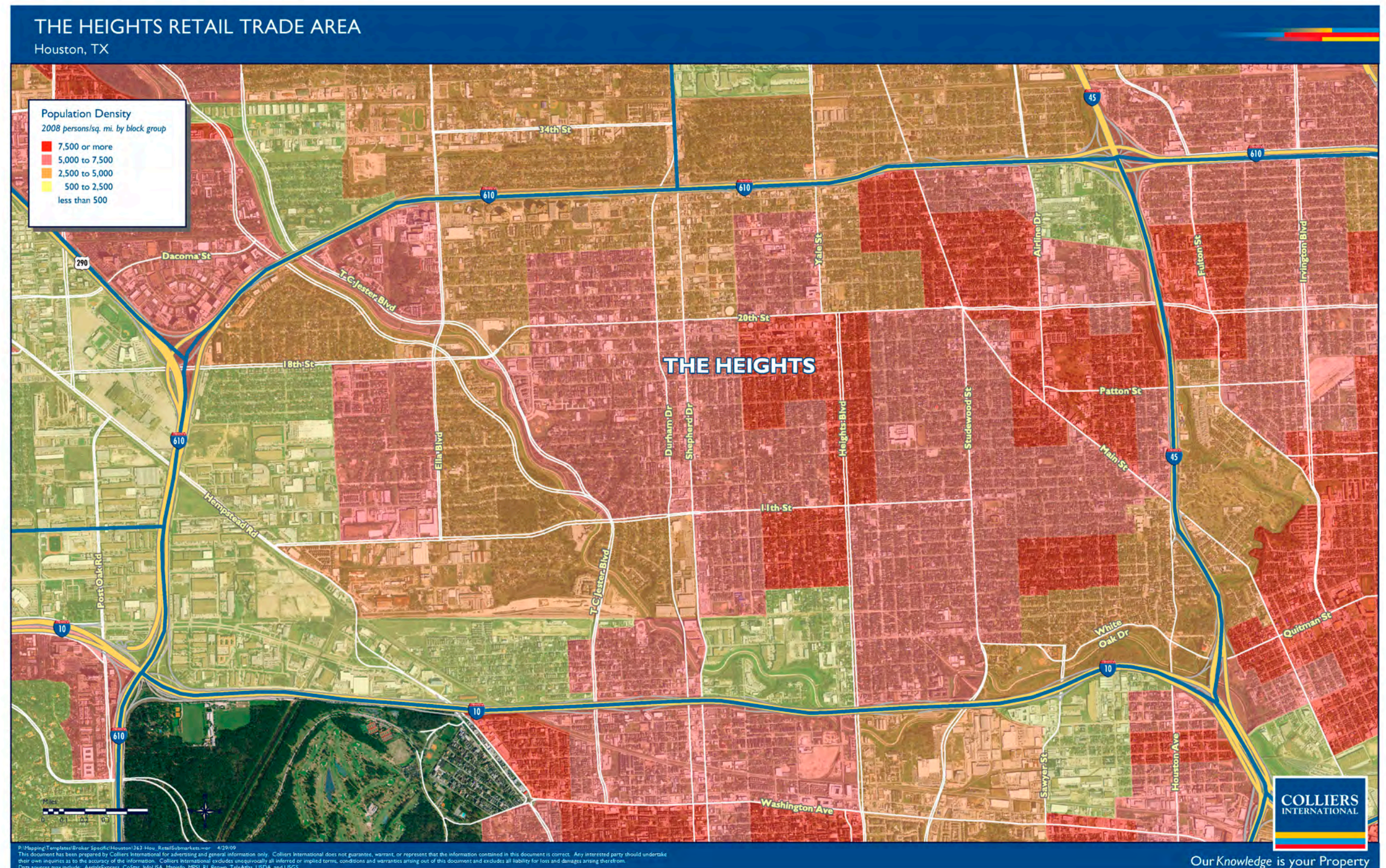
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### Single Variable Demographic Maps

This is another single variable demographic map that is part of a series. This example shows how you can include a transparency to show demographic data with an aerial photograph and in this case in the context of a retail trade area.



# Colliers GIS MAPPING SAMPLE BOOK

## Demographic Analysis

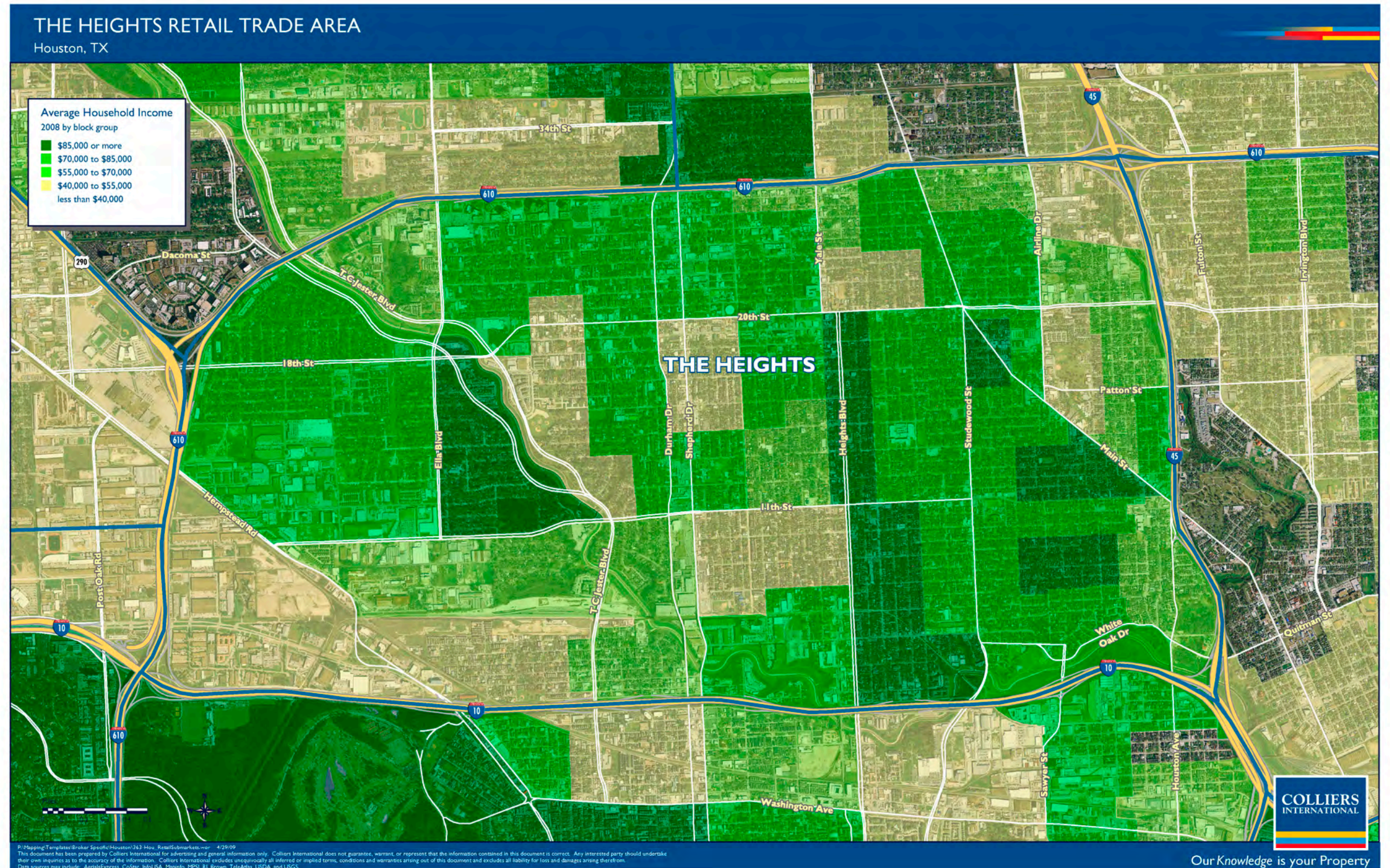
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# Colliers GIS MAPPING SAMPLE BOOK

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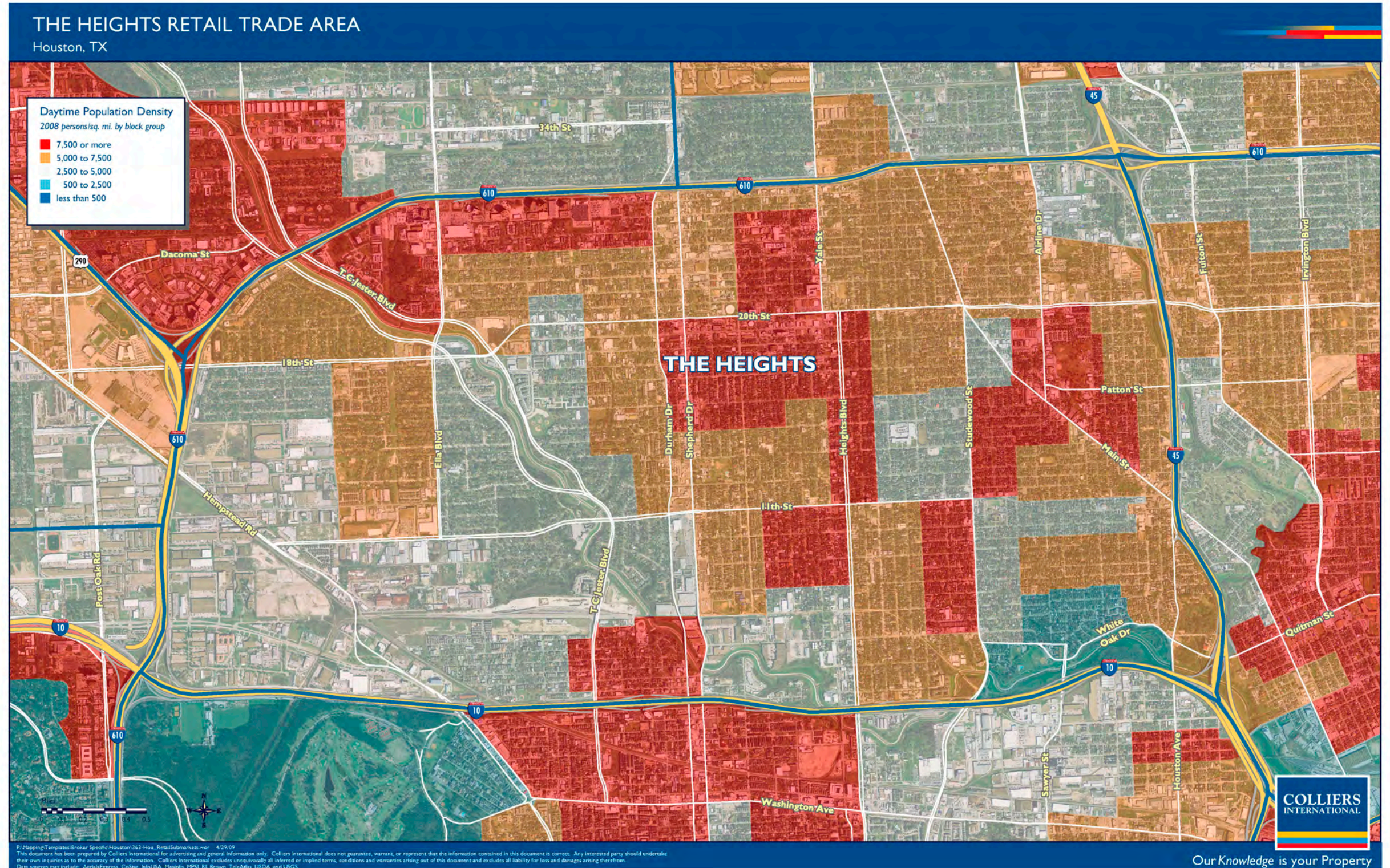
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### Single Variable Demographic Maps

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## Demographic Analysis

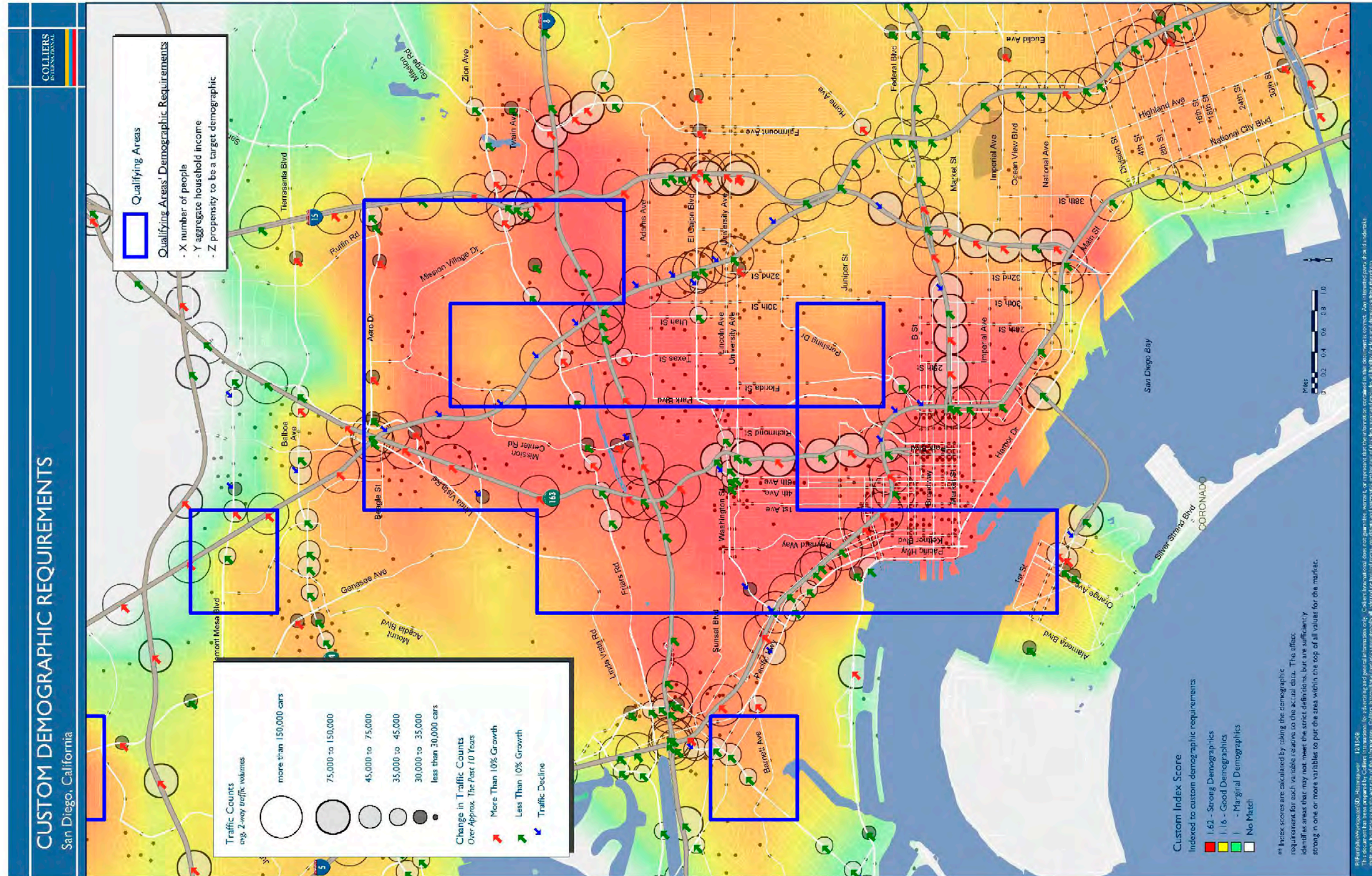
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### Multi Variable Indexed Analysis

This map zooms in to an area that strongly met the client's criteria and adds graduated symbols showing traffic counts, in addition to the traffic trends over the past 10 years at those count locations. Traffic count values could also have been added to the calculation of the heat map and shown that way.



# Colliers GIS MAPPING SAMPLE BOOK

## Demographic Analysis

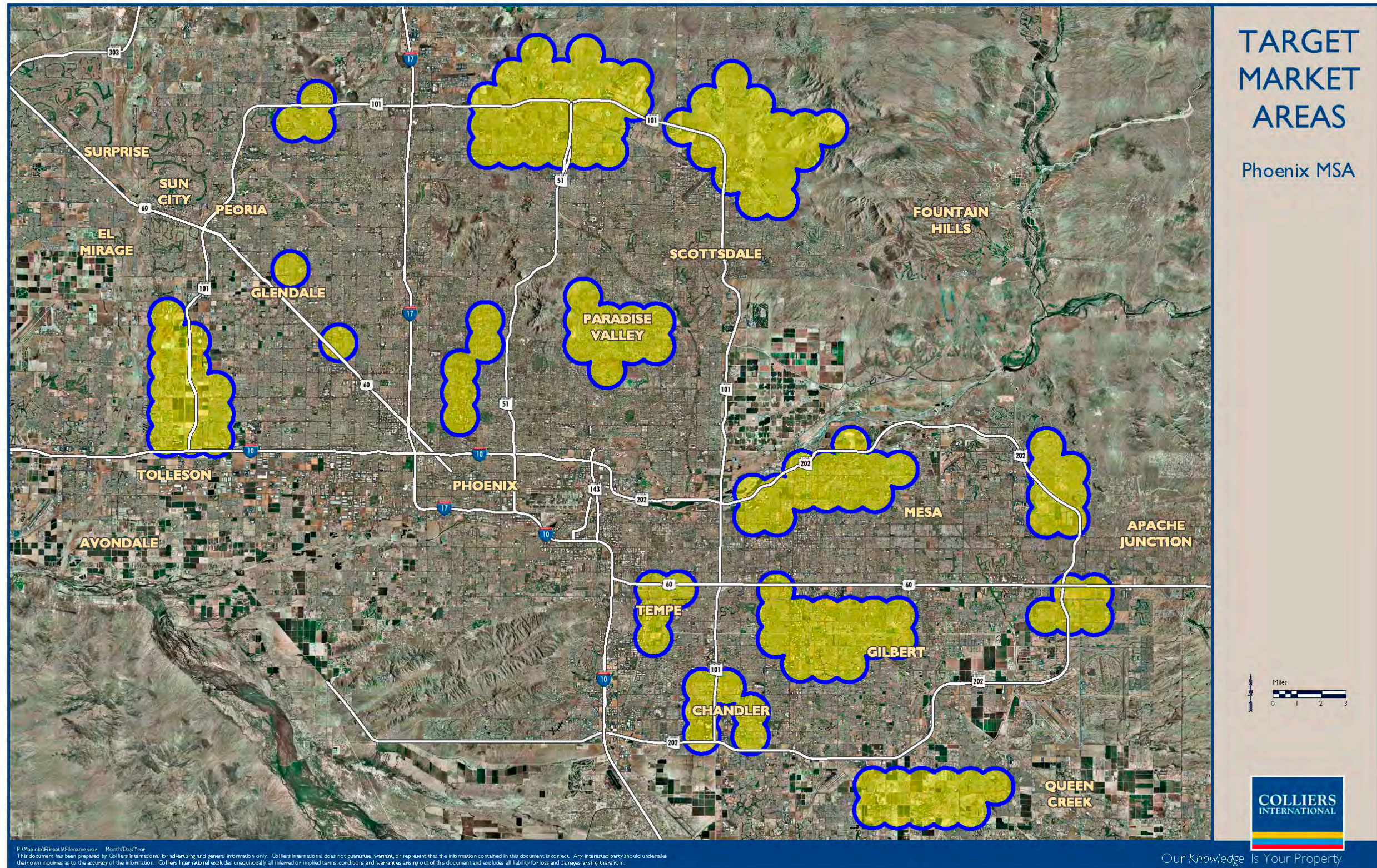
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Demographic maps can vary from simple maps describing an area with a single variable, to very complex projects, multivariate modeling, trade area generation, and predictive analytics.

## Multi Variable Analysis

This is a simplified demographic map, where multiple variables were used to identify areas that met the client's demographic requirements. The demographic layer was not included on the map, instead only showing the highlighted target areas over an aerial.



# Colliers GIS MAPPING SAMPLE BOOK

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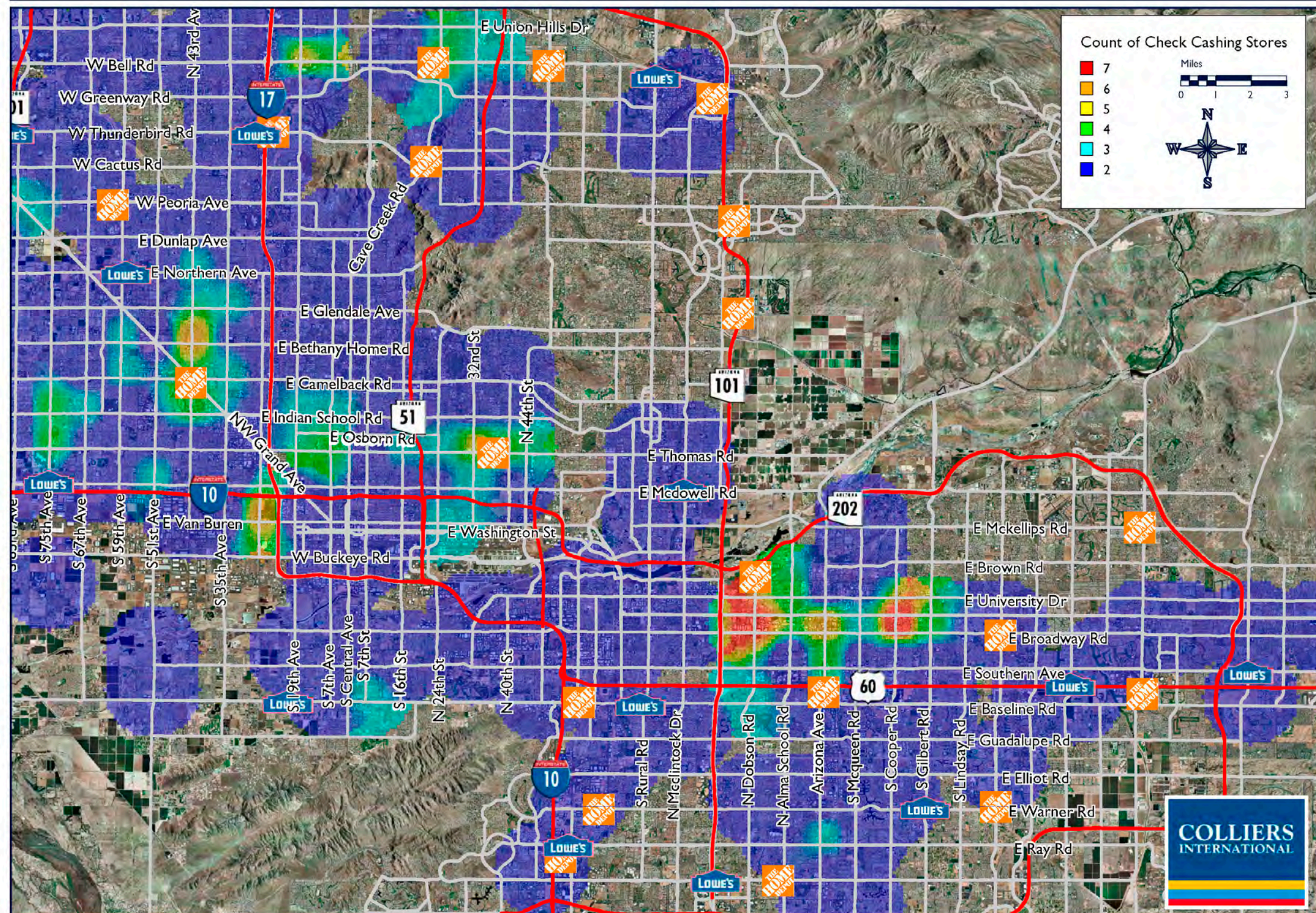
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Demographic maps can vary from simple maps describing an area with a single variable, to very complex projects, multivariate modeling, trade area generation, and predictive analytics.

### Deriving Correlations

While not technically a demographic map, this was part of a series of maps that contributed to a demographic analysis – in this case to see if there was a correlation between check cashing locations and Home Depot's. If true, we could have gone further to calculate if/how this correlation affected sales volumes.

## Heat Map: Metro Phoenix Check Cashing Stores & Home Supply Stores



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Data sources may include: AerialsExpress, CoStar, InfoUSA, Mapinfo, MP51, RL Brown, TeleAtlas, USDA, and USGS.

# Colliers GIS MAPPING SAMPLE BOOK

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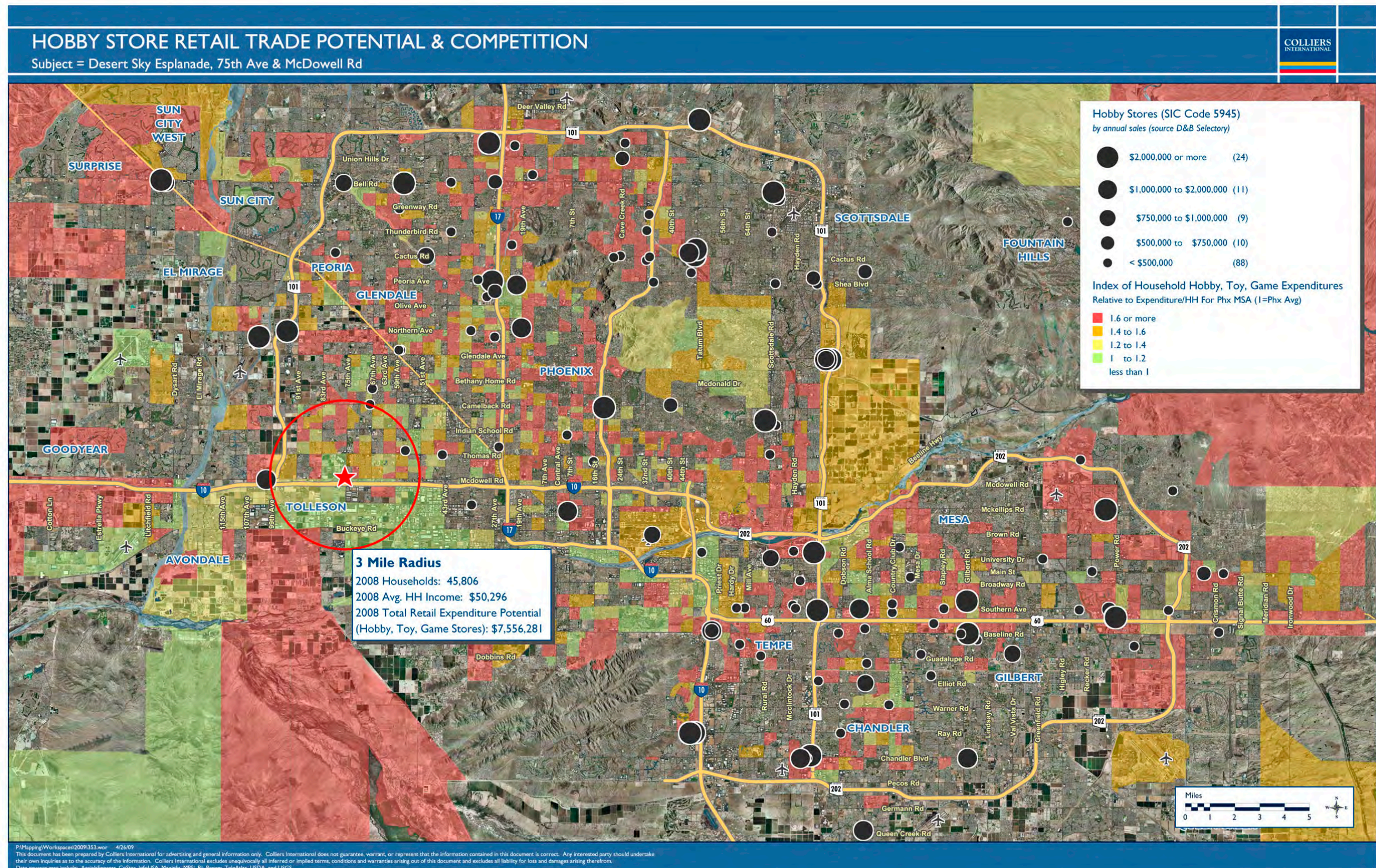
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## Consumer Expenditure & Competition

A retail landlord example, this map is part of a series trying to identify potential successful tenants. The block group layer shows consumer expenditure indexed to all block groups in the Phoenix MSA. The map also shows existing retail competition with sales reflected by graduated symbols.

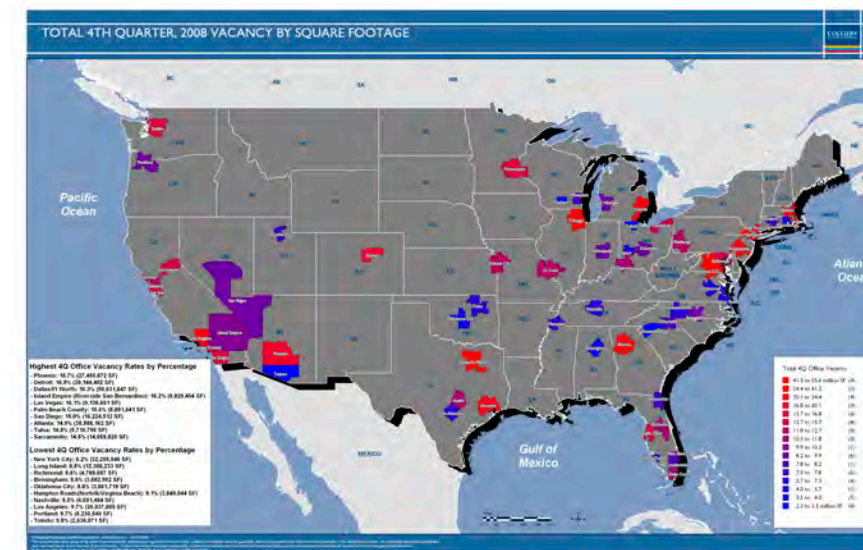
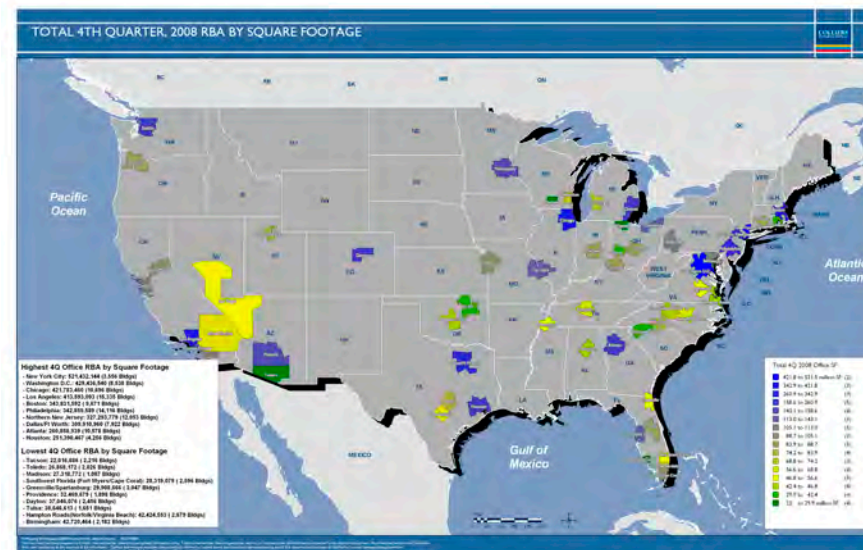
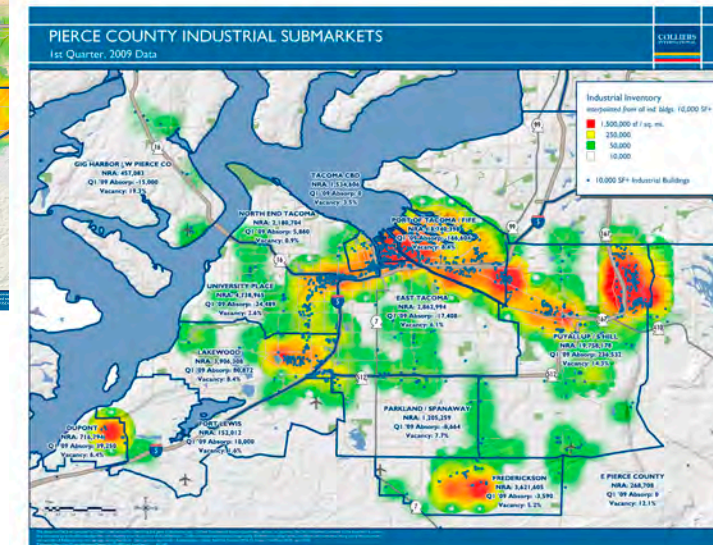
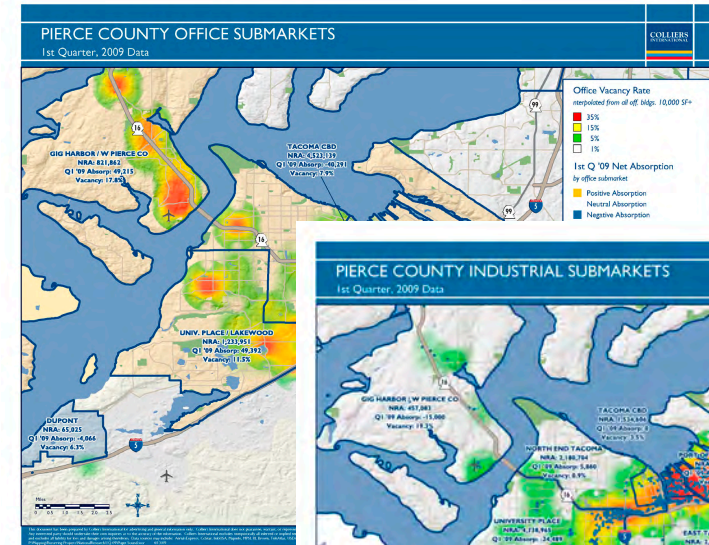
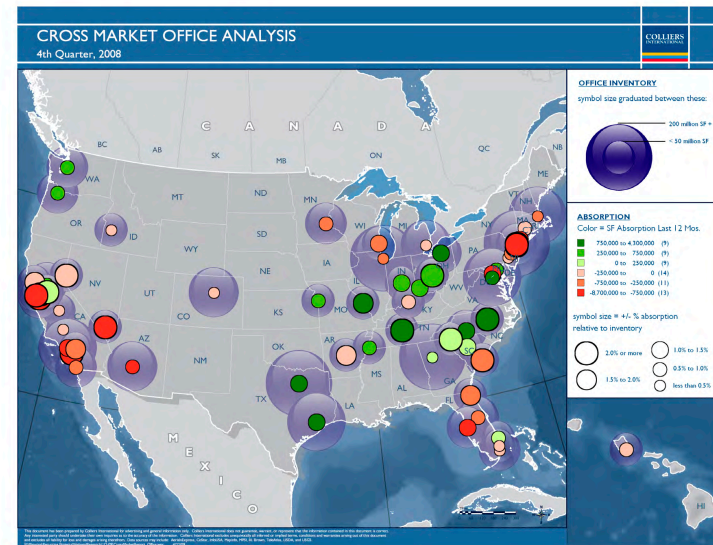
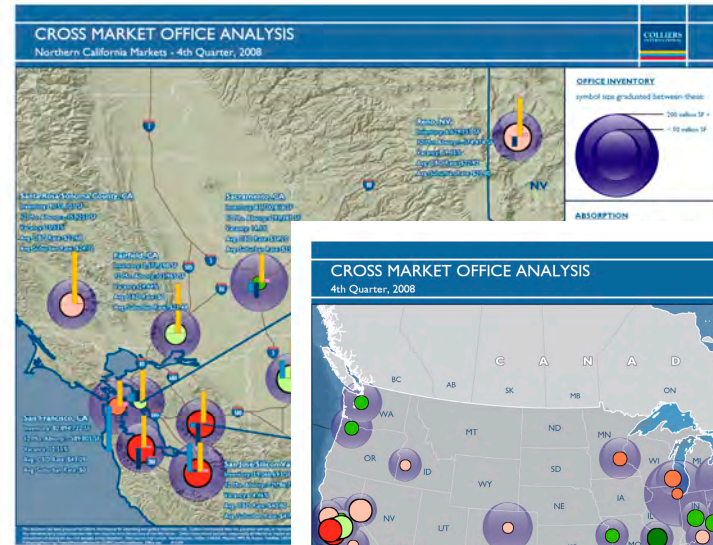


# Colliers GIS MAPPING SAMPLE BOOK

## Real Estate / Market Analysis

There's a vast amount of real estate data and statistics that are tracked at the property level on an ongoing basis and reported on comprehensively, typically on a quarterly basis. Maps are a great way to simplify and understand this data visually. Maps can also help you identify trends and facts about the data that might otherwise go unrecognized.

Square footage, vacancy, absorption, rental rates, and cap rates are commonly analyzed real estate statistics, but any tracked building information can be mapped. Combinations and correlations between these variables can also be derived and mapped. The data can be aggregated, summarized, and mapped at a national or market level, or can be analyzed at the individual building level.



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## Real Estate / Market Analysis

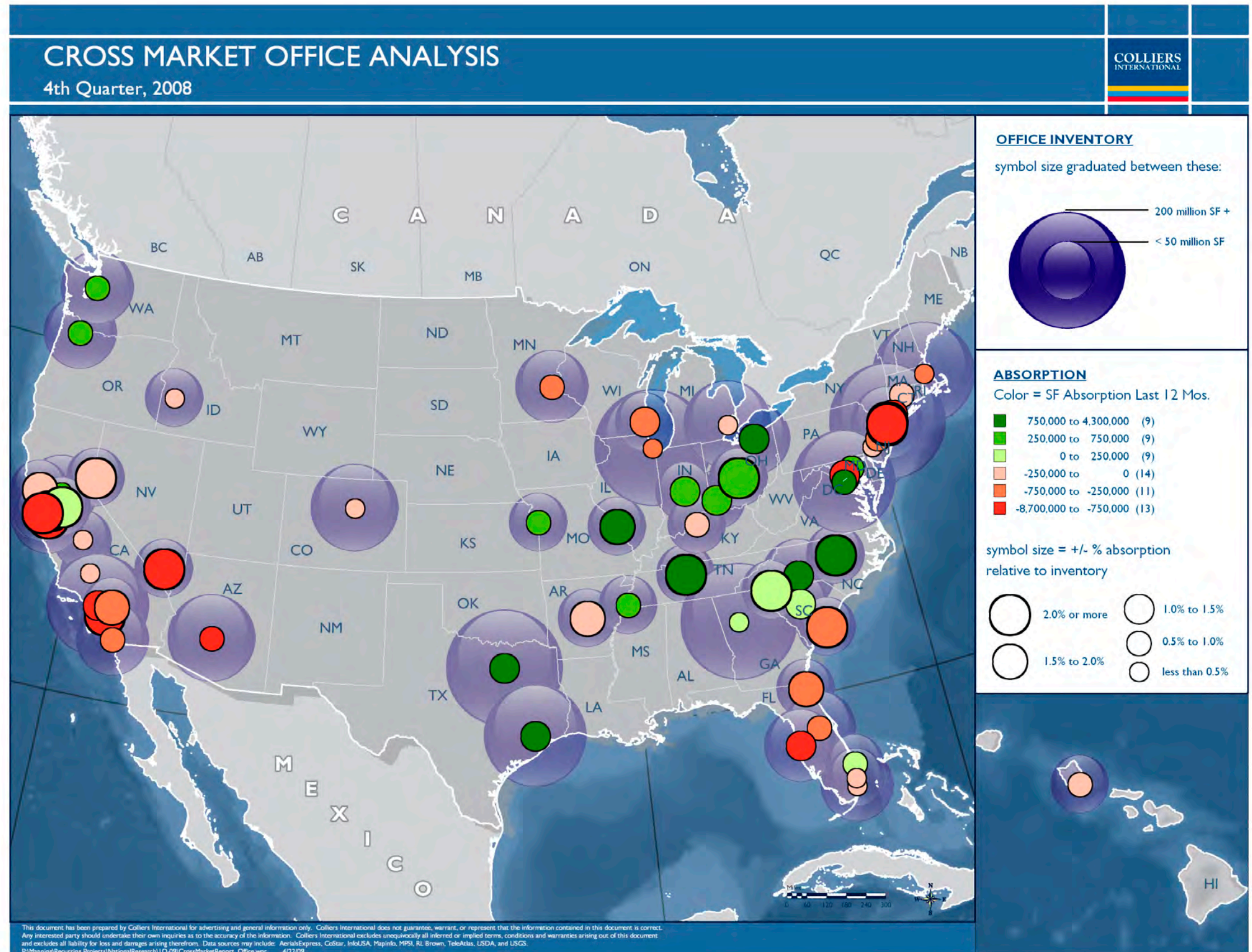
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## Cross Market Analysis

This compares quarterly absorption trends between major US markets, and visually represents the size in SF of each market. The data for this map comes from summarized by Colliers Research for office and industrial properties each quarter.

The purple dots show total inventory by graduated symbol, while the colored dots in the middle show total absorption for the most recent quarter (by color) and percent absorption relative to the SF in the market (by graduated symbol).



# Colliers GIS MAPPING SAMPLE BOOK

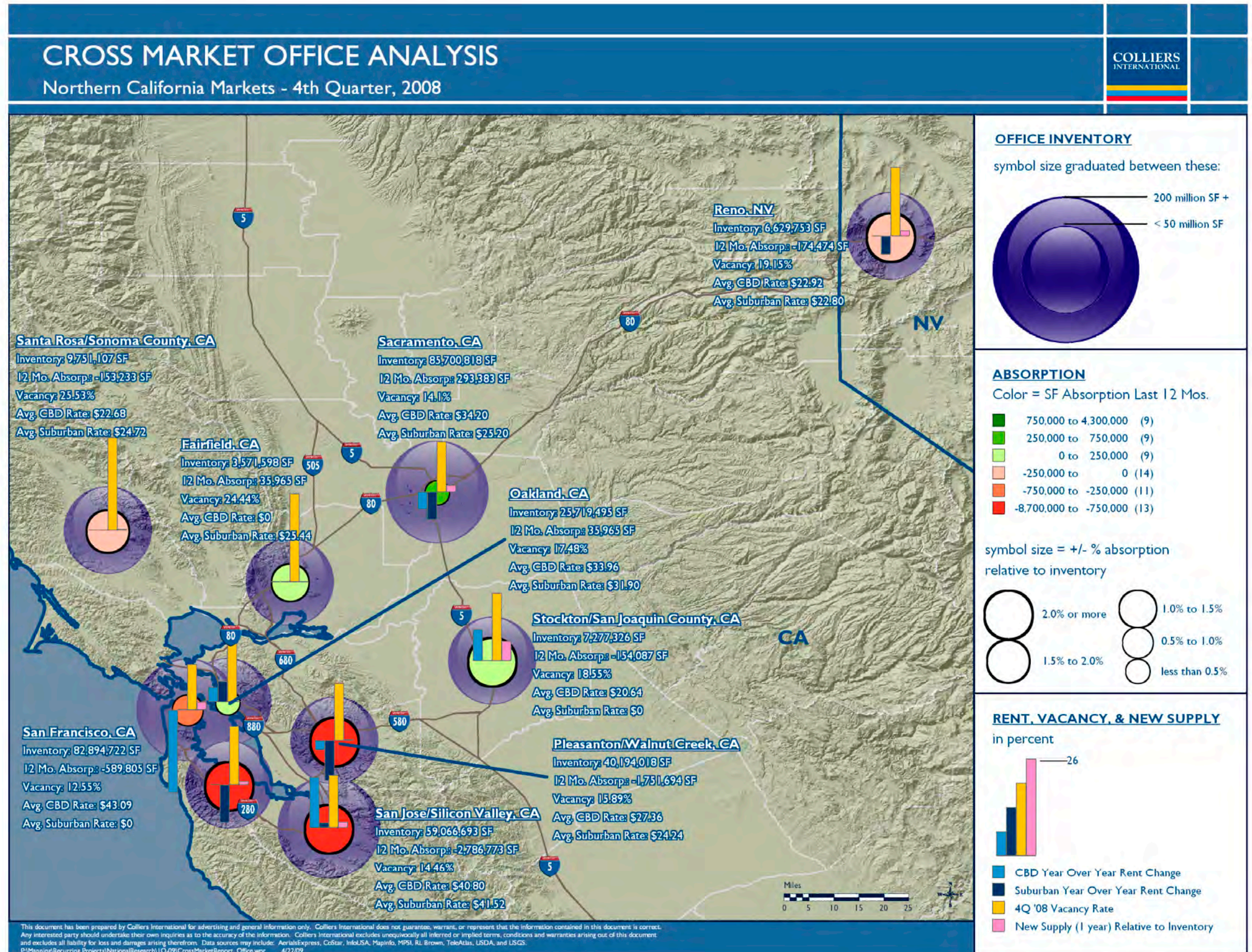
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## Cross Market Analysis

This cross market analysis shows the same Colliers Research data as the previous map, but at a regional scale. This gives the map more room to show more detail and data. Graphs have been added to show CBD and Suburban rent change from the previous quarter (in %), vacancy rate for the current quarter, and % of new supply introduced in the current quarter relative to the total SF in the market. The labels add specificity to the data on the map.



# Colliers GIS MAPPING SAMPLE BOOK

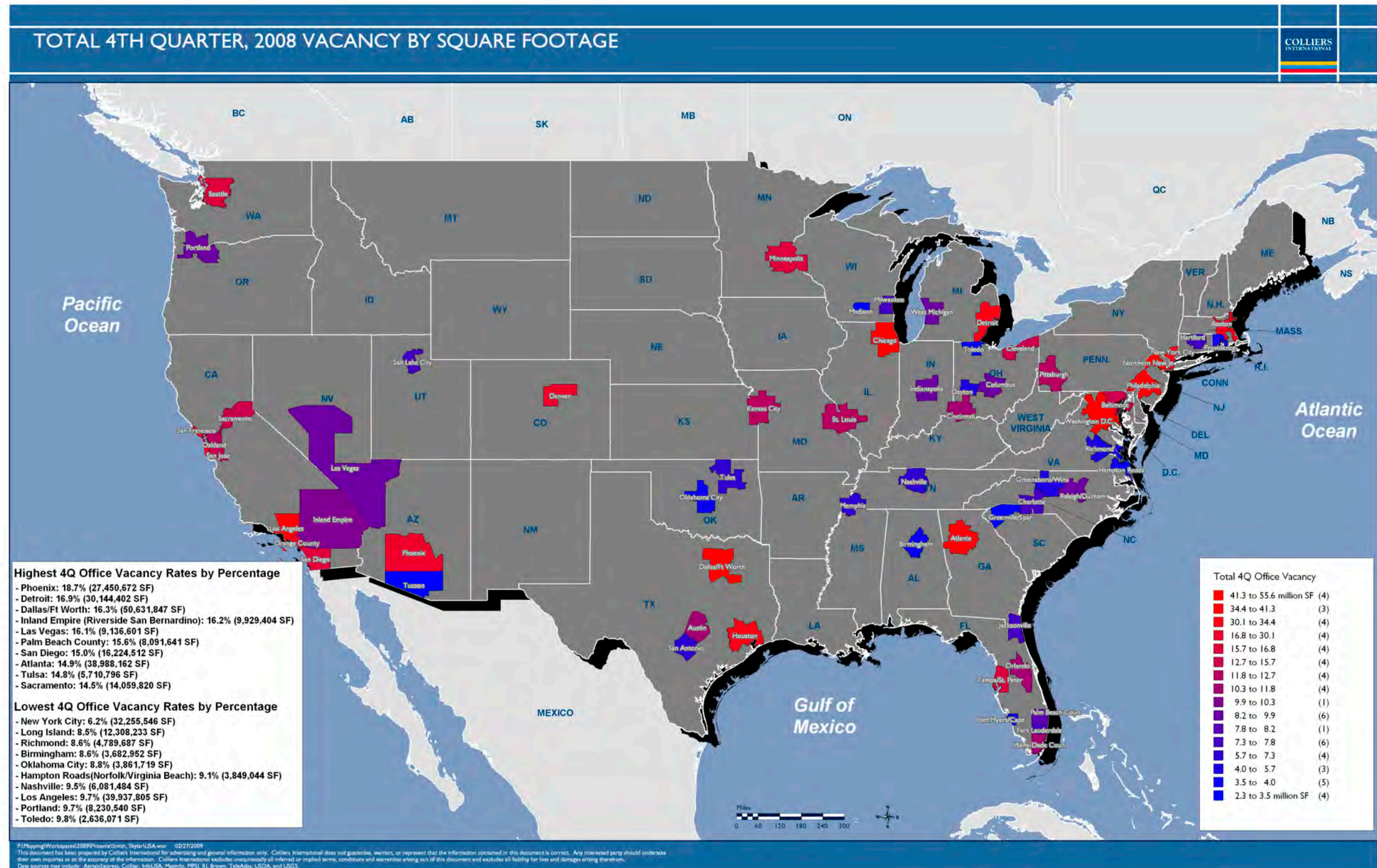
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## Cross Market Analysis

This map uses a shaded / colored thematic to represent total vacant square feet, with text off the map highlighting the top and bottom markets in terms of vacancy rate. Similar to the previous cross market maps, this map simply demonstrates another technique to show market data.



# Colliers GIS MAPPING SAMPLE BOOK

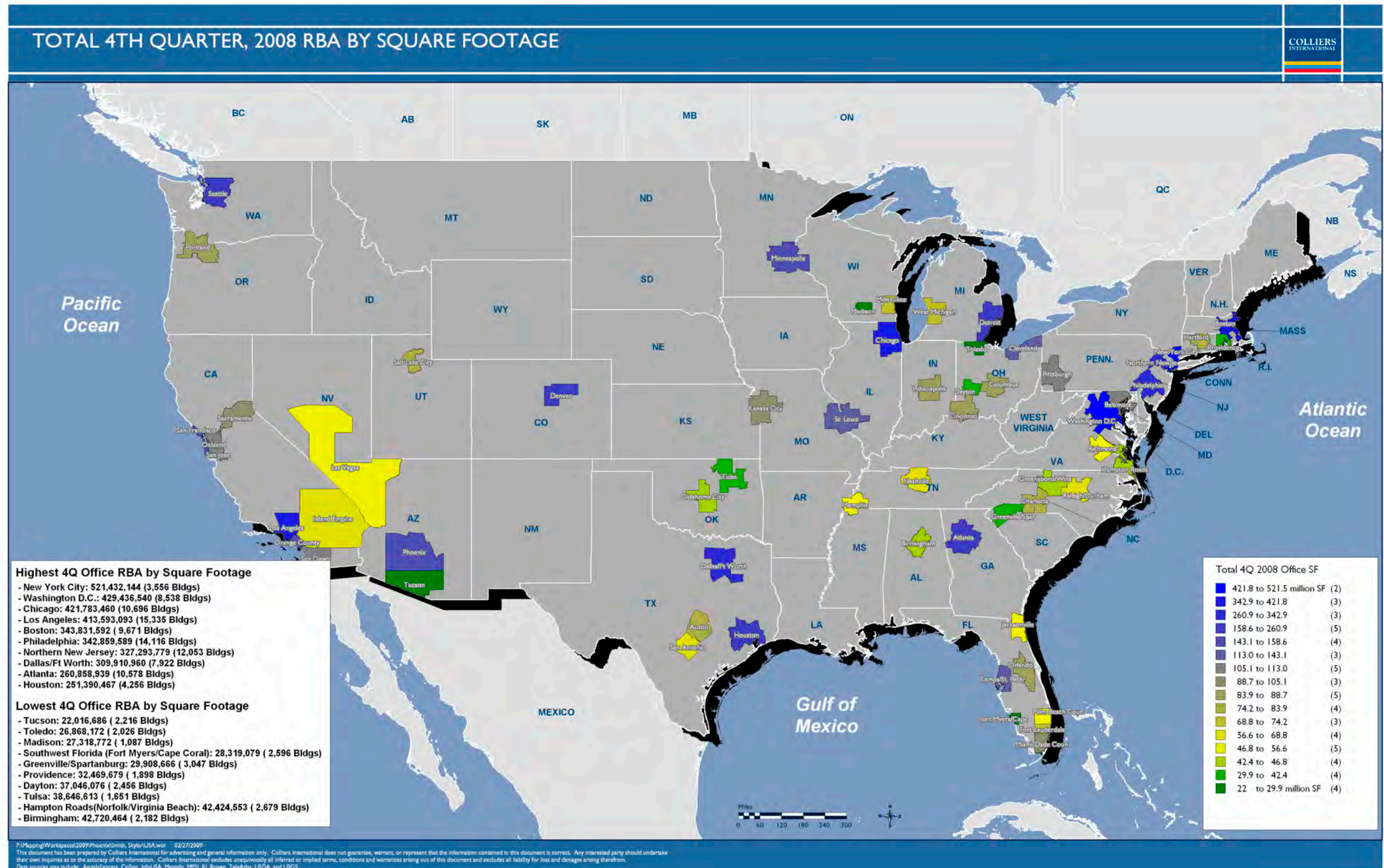
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## Cross Market Analysis

Total square footage in each market is the variable mapped here. This map goes with the shaded thematic map showing vacancy. These maps are simplified, compared to the cross market maps with graduated symbols, but showing the data this way may be beneficial depending on the circumstances. For example, if there were client or other data added to the map, you might want a simpler base layer.



# Colliers GIS MAPPING SAMPLE BOOK

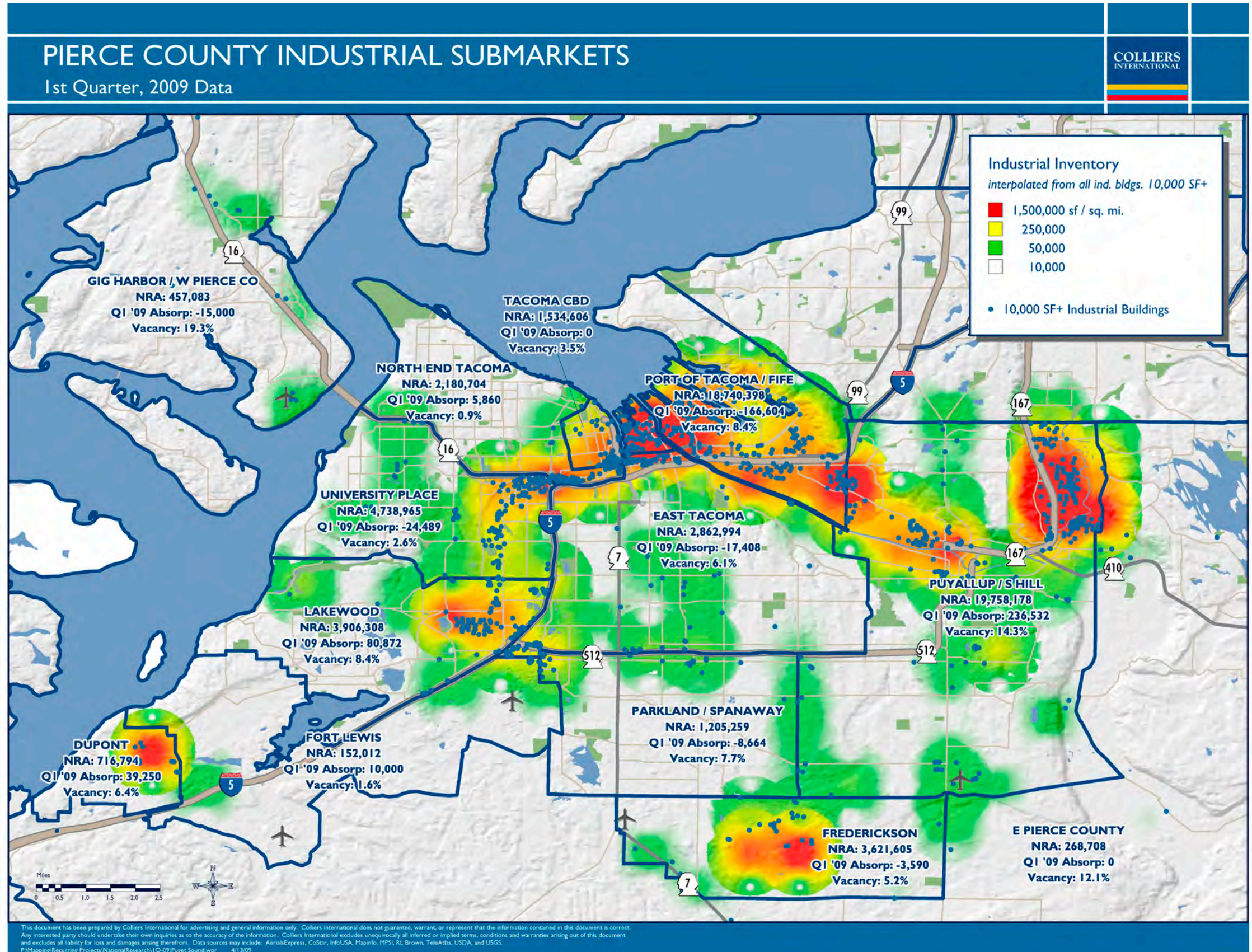
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## Market / Submarket Analysis

This map takes a more granular look at the data used in the cross market maps. Many different variables could be mapped in this fashion, again depending on the data collected at the building, submarket, and market levels. In this case all industrial buildings over 10,000 SF are shown as small dots, with the total square footage in the market shown as the grid / hot spot layer. Submarkets are labeled with other pertinent information for the current quarter.



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## Market / Submarket Analysis

This office example shows vacancy rate as the grid / hot spot layer, and uses a transparency to show a simplified colored thematic of absorption by submarket. Any other variables associated with the building data could also be mapped in similar fashion.

